



## GREECE

The Report referred to in Article 5 of Directive 92/117/EEC

### TRENDS AND SOURCES OF ZOONOSSES AND ZOOBOTIC AGENTS IN HUMANS, FOODSTUFFS, ANIMALS AND FEEDINGSTUFFS

including information on foodborne outbreaks and  
antimicrobial resistance in zoonotic agents

IN 2004

## INFORMATION ON THE REPORTING AND MONITORING SYSTEM

Country: **Greece**

Reporting Year: **2004**

**Institutions and laboratories involved in monitoring:**

| Laboratory name | Description | Contribution |
|-----------------|-------------|--------------|
|-----------------|-------------|--------------|

## **PREFACE**

This report is submitted to the European Commission in accordance with Article 5 of Council Directive 92/117/EEC<sup>1</sup>. The information has also been forwarded to the European Food Safety Authority (EFSA).

The report contains information on trends and sources of zoonoses and zoonotic agents in Greece during the year 2004. The information covers the occurrence of these diseases and agents in humans, animals, foodstuffs and in some cases also in feedingstuffs. In addition the report includes data on antimicrobial resistance in some zoonotic agents and commensal bacteria as well as information on epidemiological investigations of foodborne outbreaks. Complementary data on susceptible animal populations in the country is also given.

The information given covers both zoonoses that are important for the public health in the whole European Community as well as zoonoses, which are relevant on the basis of the national epidemiological situation.

The report describes the monitoring systems in place and the prevention and control strategies applied in the country. For some zoonoses this monitoring is based on legal requirements laid down by the Community Legislation, while for the other zoonoses national approaches are applied.

The report presents the results of the examinations carried out in the reporting year. A national evaluation of the epidemiological situation, with special reference to trends and sources of zoonotic infections, is given. Whenever possible, the relevance of findings in foodstuffs and animals to zoonoses cases in humans is evaluated.

The information covered by this report is used in the annual Community Summary Report on zoonoses that is published each year by EFSA.

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<sup>1</sup> Council Directive 92/117/ECC of 17 December 1992 concerning measures for protection against specified zoonoses and specified zoonotic agents in animals and products of animal origin in order to prevent outbreaks of foodborne infections and intoxications, OJ L 62, 15.3.1993, p. 38

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## **1. ANIMAL POPULATIONS**

The relevance of the findings on zoonoses and zoonotic agents has to be related to the size and nature of the animal population in the country.

### **A. Information on susceptible animal population**

#### **Sources of information:**

Internal Data Base computerized system of Hellenic Ministry of Agriculture ( update 2004). These statistics may vary from other national or E.U. sources of animal population records.

#### **Dates the figures relate to and the content of the figures:**

Information and clarifications related to tables 14.1 and 14.2

No. live animals represents an average population during the year 2004. In very few prefectures the animal population estimate derived at the end of the year 2004. The No. of slaughtered animals represent the total number of slaughters ( animals ) during the year 2004.

**Table 14.1 Susceptible animal populations: number of herds and holdings rearing animals**

\* Only if different than current reporting year

| Animal species          | Category of animals                                  | Number of herds or flocks |       | Number of holdings |       |
|-------------------------|------------------------------------------------------|---------------------------|-------|--------------------|-------|
|                         |                                                      |                           | Year* |                    | Year* |
| Cattle (bovine animals) | dairy cows and heifers                               |                           |       | 11284              |       |
|                         | meat production animals                              |                           |       | 17062              |       |
|                         | mixed herds                                          |                           |       | 9038               |       |
|                         | in total                                             |                           |       | 37384              |       |
| Ducks                   | in total                                             | 1000                      |       |                    |       |
| Gallus gallus           | breeding animals - in total                          | 269                       |       | 224                |       |
|                         | breeding animals for meat production line - in total | 247                       |       | 208                |       |
|                         | laying hens                                          | 361                       |       |                    |       |
|                         | parent birds - in total                              | 269                       |       | 224                |       |
|                         | breeding animals for egg production line - in total  | 22                        |       | 16                 |       |
|                         | mixed flocks/holdings                                | 27                        |       | 24                 |       |
|                         | broilers                                             |                           |       | 1301               |       |
|                         | in total                                             | 500                       |       |                    |       |
| Geese                   | in total                                             | 22520                     |       |                    |       |
| Goats                   | in total                                             | 101923                    |       |                    |       |
| Pet animals             | dogs                                                 | 4365                      |       |                    |       |
| Pigs                    | in total                                             | 64632                     |       |                    |       |
| Sheep                   | in total                                             | 30134                     |       |                    |       |
| Solipeds                | horses - in total                                    | 35                        |       |                    |       |
| Turkeys                 | in total                                             | 34                        |       |                    |       |
| Farmed deer             | in total                                             | 170                       |       |                    |       |
| Farmed wild boars       | in total                                             | 12050                     |       |                    |       |
| Rabbits                 | in total                                             | 175                       |       |                    |       |
| Ostriches               | in total                                             |                           |       |                    |       |

**Footnote**

Additional reporting herds: Sheep & goat mixed:39.008,Horses:30.134,Beekeepers:24.000,Sparus aurata-fish:250,Bass fish:300,Trout:100,Live molluscs:150,Dog owners:101.923,Echinoderma:57,Stray dogs (1998):150.000, Cat owners:180.325

**Table 14.2 Susceptible animal populations: number of animals**

\* Only if different than current reporting year

| Animal species          | Category of animals                                  | Number of slaughtered animals |       | Livestock numbers (live animals) |       |
|-------------------------|------------------------------------------------------|-------------------------------|-------|----------------------------------|-------|
|                         |                                                      |                               | Year* |                                  | Year* |
| Cattle (bovine animals) | calves (under 1 year)                                | 25377                         |       | 208718                           |       |
|                         | dairy cows and heifers                               | 6162                          |       | 254294                           |       |
|                         | meat production animals                              | 171545                        |       | 549525                           |       |
|                         | in total                                             | 203084                        |       | 870691                           |       |
| Ducks                   | in total                                             | 2505                          |       | 15316                            |       |
| Gallus gallus           | breeding animals for meat production line - in total | 435000                        |       | 1089340                          |       |
|                         | breeding animals for egg production line - in total  | 85000                         |       | 201000                           |       |
|                         | broilers                                             | 111000000                     |       | 112000000                        |       |
|                         | laying hens                                          | 2278428                       |       | 6227830                          |       |
| Geese                   | parent birds for meat production line                | 435000                        |       | 1089340                          |       |
|                         | parent birds for egg production line                 | 85000                         |       | 201000                           |       |
|                         | in total                                             | 2455                          |       | 9313                             |       |
|                         | in total                                             | 793347                        |       | 3070033                          |       |
| Pet animals             | dogs                                                 |                               |       | 304106                           |       |
|                         | cats                                                 |                               |       | 390404                           |       |
| Pigs                    | sows and gilts                                       |                               |       | 116651                           |       |
|                         | boars                                                |                               |       | 10089                            |       |
|                         | fattening pigs                                       |                               |       | 1955562                          |       |
|                         | in total                                             | 844000                        |       | 2096754                          |       |
| Sheep                   | in total                                             | 1851005                       |       | 5328102                          |       |
| Solipeds                | horses - in total                                    |                               |       | 53556                            |       |
| Turkeys                 | in total                                             | 178000                        |       | 212500                           |       |
| Partridges              | in total                                             |                               |       | 6413                             |       |
| Pigeons                 | in total                                             |                               |       | 1000                             |       |
| Rabbits                 | in total                                             | 5500                          |       | 379108                           |       |
| Ostriches               | in total                                             | 235                           |       | 6677                             |       |
| Farmed wild boars       | in total                                             | 220                           |       | 14452                            |       |
| Farmed deer             | in total                                             | 5                             |       | 815                              |       |
| Pheasants               | in total                                             |                               |       | 21900                            |       |
| Quails                  | in total                                             |                               |       | 1200                             |       |
| Stray dogs              | in total                                             |                               |       | 150000                           |       |

**Footnote**

Other live animals and fish: sheep & goat mixed:4.485.339, beehives:12.000.000,Sparus aurata:42.000tn/year, Bass fish:18.000tn/year,trout:2200 tn/year, Live-Bivalvia molluscs:40.000 tn/year,Echinoderma:8000 (y 2003)

## **2. INFORMATION ON SPECIFIC ZONOSSES AND ZONOTIC AGENTS**

Zoonoses are diseases or infections, which are naturally transmissible directly or indirectly between animals and humans. Foodstuffs serve often as vehicles of zoonotic infections. Zoonotic agents cover viruses, bacteria, fungi, parasites or other biological entities that are likely to cause zoonoses.

## **2.1. SALMONELLOSIS**

### **2.1.1. General evaluation of the national situation**

#### **A. General evaluation**

##### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Salmonella

AFFECTED materials: Feed material of animal origin, vegetable origin and compound feedingstuffs

Surveillance system

There are no compulsory programs in force . The new legal requirements (new zoonoses Directive and Regulation) will change the existing monitoring situation and new surveillance strategies for monitoring Salmonella agents will be in force in fore coming years in accordance with Community targets . Direct adaptation and compliance on the new Salmonella monitoring programmes and schemes is expected to be finalized the next years at EU member states.

Measures in case of positive findings

According to the current EU Directives.

Ten ( 10) different Serovars isolated and serotyped by the National Reference Laboratory (NRL) for Salmonellosis in Greece during 2004 ( Located in Chalkida, Evia prefecture) are given below:

1. S. Typhimurium (from poultry- final product)
2. S. Carno ( from poultry offal meal)
3. S.Tomegle (from forages and roughage)
4. S. Orianienberg ( from poultry- final product)
5. S. Livingstone ( from poultry- final product)
6. S. Newport (from poultry- final product)
7. S. Mbandaca (from poultry- final product)
8. S. Agona (from Soya-bean derived)
9. S. 3,15:- ( from poultry- ,Final product)
10. S. Tennessee ( from Fish meal and poultry- final product)

DISEASE/AGENT: Salmonella

AFFECTED SPECIES: Poultry breeding flocks- Callus gallus

Susceptible population

Parent stock for egg and meat production line is estimated around 1.290.340 birds (2004 national zoonoses records) .

Surveillance system

A control program, according to the Annex III of the Dir. 92/117, is already in force since 1998. Moreover, it is important to mention the start of a baseline study in breeding flocks of Gallus gallus supervised by the Hellenic central competent veterinary authorities in line with uniform EU guidelines approved by the Commission.

Method used

The methods ISO 6579 and ISO 6580 are mainly used for the detection of Salmonella spp.

Measures in case of positive findings

Slaughter of infected flock or prohibition of placement of hatching eggs to the hatchery for as long as the disease exists.

Epidemiological and statistical report

Serovars isolated and identified for the year 2004 by the National Reference Laboratory (NRL-Located in Chalkida, Evia prefecture) for Salmonellosis are presented below :

1. S. Enteritidis
2. S. Typhimurium
3. S. Seftenberg
4. S. Tomson
5. S. Virchow
6. S. Blockley
7. S. Pullorum
8. S. London
9. S. Kottbus

Looking retrospectively the reported Salmonella serovars for the years 2002 and 2003 are given below:

1. S. Braenderup
2. S. Enteritidis
3. S. Typhimurium
4. S. Meleagritus
5. S. Cauno
6. S. Virchow
7. S. Blockley
8. S. Livingstone
9. S. Anatum

Results of the investigations in the year 2004

Data are presented in tables 3.2.1.

**Additional information**

DISEASE/AGENT: Salmonella in

AFFECTED SPECIES: Commercial and non -commercial Poultry other than breeding flocks  
Surveillance system

Various survey activities are implemented in the country based on sampling submitted into the laboratories sporadically.

Method used

The method ISO 6579 for detection of Salmonella spp.

Epidemiological history

In a prospective study during the 1985-1990, 1184 strains of Salmonella spp have been isolated from animals. Predominant serotype was S. Gallinarum.

DISEASE/AGENT: Salmonella in

AFFECTED SPECIES: Commercial and non -commercial Poultry other than breeding flocks  
Surveillance system

Various survey activities are implemented in the country based on sampling submitted into the laboratories sporadically.

Method used

The method ISO 6579 for detection of Salmonella spp.

Epidemiological history

In a prospective study during the 1985-1990, 1184 strains of Salmonella spp have been isolated from animals. Predominant serotype was S. Gallinarum.

Twenty two (22) different Serovars isolated, serotyped and reported by the National Reference Laboratory (NRL) for Salmonellosis in Greece ( Located in Chalkida, Evia prefecture) during the Year 2004.

Among all(22), the predominant Salmonella serovars reported at rearing period in Broilers were S Blockley(20) and S. Meleagridis (15).

Results of the investigations in the year 2003

Data are presented in tables 3.2.2. and 3.2.3.

DISEASE/AGENT: Salmonella

AFFECTED SPECIES: Animals (non poultry)

Surveillance system

There is not any specific monitoring program in force.

Data are based on the samples incidentally submitted to the laboratories.

Method used

The bacteriological method ISO 6579 for the detection of Salmonella spp

Epidemiological history

In a prospective study during 1985-1990, 1184 strains of Salmonella spp have been isolated from animals. The predominant serotype was S.Gallinarum. For 2002 and 2003 S. Typhimurium and S. Agona respectively had been exclusively reported based on the small sample frame tested. In the year 2004 the reported salmonella serovars were S. Typhimurium (Goats, rabbits and turtles ), S. Dublin ( cattle), S. Corvallis (Cattle ), S. Litchfield (Turtles ) and Salmmonella spp- non typed ( Turtles ).

Results of the investigations in the year 2004

Data are shown in table 3.2.4

DISEASE/AGENT: Salmonella

AFFECTED SPECIES: Food

Surveillance system

Routine examination and targeted sampling at retail level, processing plan and slaughterhouse based on National and Community legislation.

Method used

The ISO 6579 is used for the detection of Salmonella in food.

Report summary evaluation

In 2003, an increased trend of reporting samples from food products was observed. More than a 2-fold increase (7.192 units) occurred in samples tested in 2003 for Salmonella compared to 2001 report (3.064). A total number of 125 Salmonella serovars isolated during 2003 compared to 101 in 2002. The predominant serovars in 2003, 2002 and 2001 were S. Enteritidis ( 61 Isolates ), S. Enteritidis (38 isolates) and 2001 S. Livingstone ( 34 isolates) respectively. In the year 2004 the predominant Salmonella serovar originated from breeding poultry (Gallus gallus) was S. Blockley.

The 2004 Serovars in Food reported by the National Reference Laboratory (NRL) for Salmonellosis in Greece (Located in Chalkida, Evia prefecture) are:

S Enteritidis, S. Amooive, S, Diarizonae, S, Blockley, S. Typhimurium, S. Indiana, S. Hadar, S. S.Livingstone, S.Meleagridis, S. virchow, S. Muenchey, S. Schwein, and S. Anatum.

Summary Results for Salmonella Serovars in Food and Animals

Overall Data are presented in Tables 3.3.1 and 3.3.2 and 3.3.3

## **2.1.2. Salmonellosis in humans**

### **A. Salmonellosis in humans**

#### **Reporting system in place for the human cases**

##### Surveillance system

Mandatory reporting of foodborn infections and laboratory confirmed cases. The reported data refer to hospitalized salmonella human cases. Notification is required within 24 hours following the diagnosis.

#### **History of the disease and/or infection in the country**

##### Epidemiological history and evaluation

In 2004 , 1493 ( incidence: 13,70 per 100.000 inhabitants) cases of salmonella were reported including the species : S. enteritidis (309), S.typhimurium (20), S. Adautua (2), S. Anatum (1), S.enteritica- arizonae (29), S. blockley (1), S. infantis (1), S. paratyphi (2), S.Typhi (6) and the remaining Salmonella spp. ( 1121).

Historically, the officially reported Salmonella cases in humans the reference years 1998, 1999 and 2000 were 918 , 221 and 206 respectively. For the year 2001, 284 human cases were reported. Human Salmonellosis cases in 2004 caused by S. Enteritidis, S, Typhimurium and other Salmonella serotypes were 1493 in total compared to 837 (2003) and 460 (2002) in previous years. According to these data an increase of Salmonella cases has been observed during 2004 in man, but in order to epidemiologically evaluate the real trends of Salmonella incidence, we must have in mind the significant underreporting practice which leads to underestimate figures providing non representative salmonella statistics. Moreover it is important to emphasize that the factor underlined above (underestimation) is considered constant for each reporting year.

Data analysis for Human Salmonellosis are given in tables 3.4.1 and 3.4.2.

#### **Additional information**

##### Source of human infection

Mainly from the consumption of infected, contaminated and cross- contaminated food and poultry meat and products there of.

**Table 3.4.1.A Salmonellosis in man - species/serotype distribution**

| <b>Salmonella</b> | <b>Cases</b> | <b>Cases Inc</b> | <b>Autochtone cases</b> | <b>Autochtone Inc</b> | <b>Imported cases</b> | <b>Imported Inc</b> | <b>unknown status</b> |
|-------------------|--------------|------------------|-------------------------|-----------------------|-----------------------|---------------------|-----------------------|
|                   | 1493         | 13.646           | 0                       | 0                     | 0                     | 0                   | 0                     |
| S. Adamstua       | 2            | 0.018            |                         |                       |                       |                     |                       |
| S. Agama          | 1            | 0.01             |                         |                       |                       |                     |                       |
| S. Anatum         | 1            | 0.01             |                         |                       |                       |                     |                       |
| S. Blockley       | 1            | 0.01             |                         |                       |                       |                     |                       |
| S. Enteritidis    | 309          | 2.83             |                         |                       |                       |                     |                       |
| S. Infantis       | 1            | 0.01             |                         |                       |                       |                     |                       |
| S. Paratyphi A    | 2            | 0.018            |                         |                       |                       |                     |                       |
| S. Typhi          | 6            | 0.05             |                         |                       |                       |                     |                       |
| S. Typhimurium    | 20           | 0.18             |                         |                       |                       |                     |                       |
| Salmonella spp.   | 1121         | 10.25            |                         |                       |                       |                     |                       |
| other serovars    | 29           | 0.26             |                         |                       |                       |                     |                       |

**Footnote**

Incidence per 100.000 inhabitants

**Table 3.4.1.B Salmonellosis in man - age distribution**

| Age Distribution   | S. Enteritidis |            |            | S. Typhimurium |          |           | Salmonella spp. |            |            |
|--------------------|----------------|------------|------------|----------------|----------|-----------|-----------------|------------|------------|
|                    | All            | M          | F          | All            | M        | F         | All             | M          | F          |
| <1 year            | 15             | 6          | 9          | 0              | 0        | 0         | 99              | 48         | 51         |
| 1 to 4 years       | 112            | 55         | 57         | 6              | 3        | 3         | 392             | 208        | 184        |
| 5 to 14 years      | 71             | 34         | 37         | 3              | 1        | 2         | 282             | 146        | 136        |
| 15 to 24 years     | 17             | 9          | 8          | 2              | 0        | 2         | 81              | 44         | 37         |
| 25 to 44 years     | 39             | 20         | 19         | 1              | 0        | 1         | 156             | 74         | 82         |
| 45 to 64 years     | 26             | 14         | 12         | 4              | 3        | 1         | 159             | 74         | 85         |
| 65 years and older | 27             | 14         | 13         | 1              | 0        | 1         | 155             | 64         | 91         |
| Age unknown        | 2              | 1          | 1          | 3              | 1        | 2         | 169             | 9          | 15         |
| <b>Total :</b>     | <b>309</b>     | <b>153</b> | <b>156</b> | <b>20</b>      | <b>8</b> | <b>12</b> | <b>1493</b>     | <b>667</b> | <b>681</b> |

**Footnote**

No classification by age and sex was made for 145 reported cases of unknown gender. (explains the observed difference from the total no.of Salm. cases =1493)

Table 3.4.2 Salmonellosis in man - seasonal distribution

| Month          | S. Enteritidis |            | S. Typhimurium |       | Salmonella spp. |       |
|----------------|----------------|------------|----------------|-------|-----------------|-------|
|                | Cases          | Cases      | Cases          | Cases | Cases           | Cases |
| January        | 0              | 0          | 0              | 13    |                 |       |
| February       | 0              | 0          | 0              | 28    |                 |       |
| March          | 0              | 0          | 0              | 3     |                 |       |
| April          | 0              | 0          | 0              | 14    |                 |       |
| May            | 1              | 6          | 59             |       |                 |       |
| June           | 2              | 25         | 81             |       |                 |       |
| July           | 6              | 44         | 119            |       |                 |       |
| August         | 2              | 96         | 225            |       |                 |       |
| September      | 3              | 53         | 181            |       |                 |       |
| October        | 1              | 18         | 84             |       |                 |       |
| November       | 5              | 46         | 119            |       |                 |       |
| December       | 0              | 21         | 37             |       |                 |       |
| not known      | 0              | 0          | 0              | 0     |                 |       |
| <b>Total :</b> | <b>20</b>      | <b>309</b> | <b>963</b>     |       |                 |       |

## 2.1.3. Salmonella in foodstuffs

Table 3.3.1 Salmonella sp. in meat and meat products

|                         | Source of information | Remarks | Epidemiological unit | Sample weight | Units tested | Units positive | S. Infantis | S. Hadar | S. Indiana | S. Virchow | S. Meleagridis | S. Muenchen | S. Schwerin | S. Anatum | S. Wien | S. Blockley | S. Livingstone | S. Enteritidis | S. Typhimurium |
|-------------------------|-----------------------|---------|----------------------|---------------|--------------|----------------|-------------|----------|------------|------------|----------------|-------------|-------------|-----------|---------|-------------|----------------|----------------|----------------|
| <b>Bovine meat</b>      |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>fresh</b>            |                       |         | S                    |               | 10           | 0              |             |          |            |            |                |             |             |           |         |             |                |                |                |
| - at slaughter          |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>minced meat</b>      |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| - at retail             |                       |         | S                    |               | 2            | 0              |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>meat products</b>    |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>ready-to-eat</b>     |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| - at processing plant   |                       |         | S                    | 25gr          | 15           | 0              |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>Pig meat</b>         |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>fresh</b>            |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| - at retail             |                       |         | S                    |               | 35           | 0              |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>meat products</b>    |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>non-ready-to-eat</b> |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| - at processing plant   |                       |         | S                    | 25GR          | 6            | 0              |             |          |            |            |                |             |             |           |         |             |                |                |                |
| - at retail             |                       |         | S                    | 25GR          | 6            | 0              |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>ready-to-eat</b>     |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| - at processing plant   |                       |         | S                    |               | 2            | 2              |             |          |            |            |                |             |             |           | 2       |             |                |                |                |
| <b>Broiler meat</b>     |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| <b>fresh</b>            |                       |         |                      |               |              |                |             |          |            |            |                |             |             |           |         |             |                |                |                |
| - at slaughter          |                       |         | S                    | 25gr          | 897          | 49             |             | 4        | 3          | 5          | 1              | 2           | 1           | 2         |         | 20          | 4              | 1              | 6              |

[illegible]

### Footnote

Source: NRLS

Remarks: Targeted sampling, Routine Microbiology and Serotyping distribution by the National Reference Laboratory for Salmonella(NRLS). ISO 6579

Table 3.3.2 *Salmonella* sp. in other food

|                         | Source of information | Remarks | Epidemiological unit | Sample weight | Units tested | Units positive | <i>S. Typhimurium</i> | <i>S. Amoutive</i> | <i>S. enterica</i> subsp. <i>arizonae</i> | <i>S. 41:z4,z24:-</i> | <i>S. Enteritidis</i> | <i>S. Infantis</i> |
|-------------------------|-----------------------|---------|----------------------|---------------|--------------|----------------|-----------------------|--------------------|-------------------------------------------|-----------------------|-----------------------|--------------------|
| <b>cow milk</b>         |                       |         |                      |               |              |                |                       |                    |                                           |                       |                       |                    |
| raw                     |                       |         | S                    |               | 29           | 0              |                       |                    |                                           |                       |                       |                    |
| <b>Dairy products</b>   |                       |         |                      |               |              |                |                       |                    |                                           |                       |                       |                    |
| ready-to-eat            |                       |         | S                    | 25GR          | 1189         | 0              |                       |                    |                                           |                       |                       |                    |
| ice-cream               |                       |         | S                    |               | 85           | 1              |                       |                    |                                           |                       | 1                     |                    |
| milk powder             |                       |         | S                    |               | 1            | 0              |                       |                    |                                           |                       |                       |                    |
| <b>Table eggs</b>       |                       |         |                      |               |              |                |                       |                    |                                           |                       |                       |                    |
| - at packing centre     |                       |         | S                    |               | 14           | 2              |                       |                    |                                           |                       | 1                     | 1                  |
| - at retail             |                       |         | S                    | 30GR          | 410          | 1              |                       |                    |                                           |                       | 1                     |                    |
| <b>Egg products</b>     |                       |         | S                    |               | 12           | 0              |                       |                    |                                           |                       |                       |                    |
| <b>Fishery products</b> |                       |         |                      |               |              |                |                       |                    |                                           |                       |                       |                    |
| fish                    |                       |         | S                    |               | 70           | 1              |                       | 1                  |                                           |                       |                       |                    |
| <b>Bakery products</b>  |                       |         | S                    |               | 144          | 3              |                       |                    |                                           |                       | 3                     |                    |
| desserts                |                       |         | S                    |               | 1            | 1              |                       |                    |                                           |                       | 1                     |                    |
| <b>Frog's leg</b>       |                       |         | S                    | 500GR         | 6            | 2              |                       |                    | 2                                         |                       |                       |                    |
| <b>Other milk</b>       |                       |         |                      |               |              |                |                       |                    |                                           |                       |                       |                    |
| heat-treated            |                       |         | S                    |               | 38           | 0              |                       |                    |                                           |                       |                       |                    |

|                                      |  |   |      |     |   |  |  |  |   |   |
|--------------------------------------|--|---|------|-----|---|--|--|--|---|---|
| <b>Live bivalve molluscs</b>         |  | S | 25GR | 147 | 2 |  |  |  | 1 | 1 |
| <b>Snails</b>                        |  | S |      | 2   | 0 |  |  |  |   |   |
| <b>Other processed food products</b> |  |   |      |     |   |  |  |  |   |   |
| sandwich                             |  | S |      | 155 | 1 |  |  |  |   | 1 |

## Footnote

Remarks: Targeted sampling, official control by law at market level, Routine microbiology, Serotyping by NRLS - ISO 6579

#### **2.1.4. Salmonella in animals**

### **A. Salmonella spp. in Gallus gallus - breeding flocks for egg production and flocks of laying hens**

#### **Monitoring system**

##### **Sampling strategy**

##### **Breeding flocks (separate elite, grand parent and parent flocks when necessary)**

Sampling Description: Summary analysis

It refers to the monitoring and control programme for Salmonella in Breeding flocks where the following sampling strategies are followed per each production category in breeders.

A. Rearing Flocks: Samples are taken when the chicks are one day old, when the birds are four weeks old and two weeks prior to pullets entering the laying phase. The samples to be taken must comprise: a) in the case of day -old chicks , samples from the internal linings of the boxes in which the chicks were delivered to a holding and from the carcasses of chicks found to be dead on arrival and b) in the case of pullets at four weeks of age or two weeks prior to entering the laying phase, pooled faeces samples made up of separate samples of fresh faeces each weighing not less than 1 g taken at random from a number of sites in the building in which the birds are kept ( i.e 60 pooled samples from sites with greater than 500 birds kept ).

B. Adult breeding flocks: Samples must be taken at least every two weeks during the laying period. Breeding flocks whose eggs are hatched at a hatchery with a total incubator capacity of 1000 eggs or more samples are taken at hatchery following the scheme below: a) pooled samples of meconium taken from 250 chicks hatched from eggs supplied to the hatchery from each breeding flock or b) samples of carcasses of 50 chicks which are dead in the shells of eggs or which have been hatched from eggs supplied to the hatchery from each breeding flock , Moreover, samples are taken every eight weeks by official sampling from breeding flocks comprising less than 250 birds whose eggs are hatched in hatcheries with a total incubator capacity of 1000 eggs or more.

C. Salmonella Positive flocks : These flocks are officially sampled in order to confirm the official results following the scheme of 60 pooled samples taken at random from sites with greater than 500 birds kept. In addition, for the purpose of examination, the birds from each house are grouped into batches of five and samples of liver ,ovary and intestines are taken for laboratory analysis using recognized methods.

##### **Methods of sampling (description of sampling techniques)**

##### **Breeding flocks (separate elite, grand parent and parent flocks when necessary): Day-old chicks**

Samples are taken when the chicks are one day old, when the birds are four

weeks old and two weeks prior to pullets entering the laying phase. The samples to be taken must comprise: a) in the case of day -old chicks , samples from the internal linings of the boxes in which the chicks were delivered to a holding and from the carcasses of chicks found to be dead on arrival and b) in the case of pullets at four weeks of age or two weeks prior to entering the laying phase, pooled faeces samples made up of separate samples of fresh faeces each weighing not less than 1 g taken at random from a number of sites in the building in which the birds are kept ( i.e 60 pooled samples from sites with greater than 500 birds kept ).

#### **Breeding flocks (separate elite, grand parent and parent flocks when necessary): Rearing period**

Samples must be taken at least every two weeks during the laying period. Breeding flocks whose eggs are hatched at a hatchery with a total incubator capacity of 1000 eggs or more samples are taken at hatchery following the scheme below: a) pooled samples of meconium taken from 250 chicks hatched from eggs supplied to the hatchery from each breeding flock or b) samples of carcasses of 50 chicks which are dead in the shells of eggs or which have been hatched from eggs supplied to the hatchery from each breeding flock , Moreover, samples are taken every eight weeks by official sampling from breeding flocks comprising less than 250 birds whose eggs are hatched in hatcheries with a total incubator capacity of 1000 eggs or more.

#### **Additional information**

Sampling in Salmonella Positive flocks:

These flocks are officially sampled in order to confirm the official results following the scheme of 60 pooled samples taken at random from sites with greater than 500 birds kept. In addition, for the purpose of examination, the birds from each house are grouped into batches of five and samples of liver ,ovary and intestines are taken for laboratory analysis using recognized methods.

### **B. Salmonella spp. in Gallus gallus - breeding flocks for meat production and broiler flocks**

#### **Monitoring system**

##### **Sampling strategy**

#### **Breeding flocks (separate elite, grand parent and parent flocks when necessary)**

General Description applied in Breeding flocks of Meat production line only: It refers to the monitoring and control programme for Salmonella in Breeding flocks where the following sampling strategies are followed per each production category in breeders.

A. Rearing Flocks: Samples are taken when the chicks are one day old, when the birds are four weeks old and two weeks prior to pullets entering the laying phase.

The samples to be taken must comprise: a) in the case of day -old chicks , samples from the internal linings of the boxes in which the chicks were delivered to a holding and from the carcasses of chicks found to be dead on arrival and b) in the case of pullets at four weeks of age or two weeks prior to entering the laying phase, pooled faeces samples made up of separate samples of fresh faeces each weighing not less than 1 g taken at random from a number of sites in the building in which the birds are kept ( i.e 60 pooled samples from sites with greater than 500 birds kept ).

B. Adult breeding flocks: Samples must be taken at least every two weeks during the laying period. Breeding flocks whose eggs are hatched at a hatchery with a total incubator capacity of 1000 eggs or more samples are taken at hatchery following the scheme below: a) pooled samples of meconium taken from 250 chicks hatched from eggs supplied to the hatchery from each breeding flock or b) samples of carcasses of 50 chicks which are dead in the shells of eggs or which have been hatched from eggs supplied to the hatchery from each breeding flock , Moreover, samples are taken every eight weeks by official sampling from breeding flocks comprising less than 250 birds whose eggs are hatched in hatcheries with a total incubator capacity of 1000 eggs or more.

C. Salmonella Positive flocks : These flocks are officially sampled in order to confirm the official results following the scheme of 60 pooled samples taken at random from sites with greater than 500 birds kept. In addition, for the purpose of examination, the birds from each house are grouped into batches of five and samples of liver ,ovary and intestines are taken for laboratory analysis using recognized methods.

Table 3.2.1 *Salmonella* sp. in Poultry breeding flocks (*Gallus gallus*)

|                                                                                                                            | Source of information | Remarks | Epidemiological unit | Flocks tested | Flocks positive | <i>Salmonella</i> spp. | <i>S. Blockley</i> | <i>S. Gallinarum biovar Pullorum</i> | <i>S. London</i> | <i>S. Kottbus</i> | <i>S. Enteritidis</i> | <i>S. Typhimurium</i> | <i>S. Senftenberg</i> | <i>S. Virchow</i> |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------|---------|----------------------|---------------|-----------------|------------------------|--------------------|--------------------------------------|------------------|-------------------|-----------------------|-----------------------|-----------------------|-------------------|
| <b>Gallus gallus</b>                                                                                                       |                       |         |                      |               |                 |                        |                    |                                      |                  |                   |                       |                       |                       |                   |
| parent breeding flocks for egg production line<br>day-old chicks<br>- during production period                             | RNLS                  |         | Flocks               | 14            | 0               |                        |                    |                                      |                  |                   |                       |                       |                       |                   |
|                                                                                                                            | RNLS                  |         | Flocks               | 54            | 5               |                        |                    |                                      |                  |                   | 5                     |                       | 1                     | 1                 |
| - during rearing period                                                                                                    | RNLS                  |         | Flocks               | 36            | 4               |                        |                    |                                      |                  |                   | 2                     |                       |                       |                   |
|                                                                                                                            | RNLS                  |         |                      |               |                 |                        |                    |                                      |                  |                   |                       |                       |                       |                   |
| parent breeding flocks for meat production line<br>day-old chicks<br>- during rearing period<br>- during production period | RNLS                  |         | Flocks               | 60            | 2               |                        |                    |                                      |                  |                   |                       | 2                     |                       |                   |
|                                                                                                                            | RNLS                  |         | Flocks               | 191           | 10              | 1                      | 5                  |                                      | 1                |                   | 2                     | 1                     |                       |                   |
|                                                                                                                            | RNLS                  |         | Flocks               | 349           | 21              |                        | 1                  |                                      |                  | 8                 | 10                    | 1                     | 1                     |                   |
| parent breeding flocks, unspecified<br>- during rearing period                                                             | RNLS                  |         | Flocks               | 6             | 0               |                        |                    |                                      |                  |                   |                       |                       |                       |                   |
|                                                                                                                            |                       |         | Flocks               | 6             | 2               |                        | 1                  | 1                                    |                  |                   |                       |                       |                       |                   |

**Footnote**

Flock definition: In accordance to Directive 90/539/EEC, Article 27.

Table 3.2.2 Salmonella sp. in other commercial poultry (Part A)

|                              | Source of information | Remarks  | Epidemiological unit | Flocks tested | Flocks positive | S. Typhimurium | S. Manhattan | S. Mishmarhaemek | S. Newport | S. Wangata | S. Washington | S. Havana | S. Infantis | S. Tennessee | S. Blockley | S. Livingstone | S. Hadar | S. Gallinarum | S. Meleagridis | S. Senftenberg |
|------------------------------|-----------------------|----------|----------------------|---------------|-----------------|----------------|--------------|------------------|------------|------------|---------------|-----------|-------------|--------------|-------------|----------------|----------|---------------|----------------|----------------|
| <b>Gallus gallus</b>         |                       |          |                      |               |                 |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| <b>laying hens</b>           |                       |          |                      | 5             | 0               |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| day-old chicks               |                       |          |                      | 85            | 29              | 2              |              |                  |            |            |               | 1         |             |              |             | 4              | 1        | 5             |                |                |
| - during production period   |                       | (1)      |                      |               |                 |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| <b>broilers</b>              |                       |          |                      |               |                 |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| day-old chicks               |                       | ISO 6579 |                      | 382           | 21              | 1              |              |                  | 1          |            |               |           |             | 1            | 6           | 8              | 1        |               |                |                |
| - during rearing period      |                       | (2)      |                      | 200           | 64              | 4              | 1            | 1                | 1          | 1          | 1             |           |             |              | 20          | 6              |          |               | 15             | 2              |
| <b>Ducks</b>                 |                       |          |                      |               |                 |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| unspecified                  |                       |          | Flock                | 3             | 0               |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| <b>Geese</b>                 |                       |          |                      |               |                 |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| unspecified                  |                       |          | Flock                | 4             | 1               |                |              |                  |            |            |               |           |             |              |             |                | 1        |               |                |                |
| <b>Turkeys</b>               |                       |          |                      |               |                 |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| breeding flocks, unspecified |                       |          |                      | 6             | 1               |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| - during production period   |                       |          |                      | 7             | 0               |                |              |                  |            |            |               |           |             |              |             |                |          |               |                |                |
| unspecified                  |                       |          |                      | 29            | 12              |                |              |                  | 11         |            |               |           |             |              |             |                |          |               |                |                |

Footnote

Remarks: Routine sampling,testing and Microbiology. Source: RVL and RNLS. (1) Routine examination ISO 6579/02; (2) Routine examination

Table 3.2.2 Salmonella sp. in other commercial poultry (Part B)

|                              | S. Anatum | S. Bredeney | S. Carno | S. Indiana | S. Enteritidis | S. Essen | S. Montevideo | S. Boecker | S. Lexington |
|------------------------------|-----------|-------------|----------|------------|----------------|----------|---------------|------------|--------------|
| <b>Gallus gallus</b>         |           |             |          |            |                |          |               |            |              |
| <b>laying hens</b>           |           |             |          |            |                |          |               |            |              |
| day-old chicks               |           |             |          |            | 13             | 1        |               |            |              |
| - during production period   |           |             |          |            |                |          |               |            |              |
| <b>broilers</b>              |           |             |          |            |                |          |               |            |              |
| day-old chicks               |           |             |          |            | 2              |          | 1             |            |              |
| - during rearing period      |           |             |          | 1          | 1              |          | 3             | 1          | 1            |
| <b>Ducks</b>                 | 2         | 2           | 1        |            |                |          |               |            |              |
| unspecified                  |           |             |          |            |                |          |               |            |              |
| <b>Geese</b>                 |           |             |          |            |                |          |               |            |              |
| unspecified                  |           |             |          |            |                |          |               |            |              |
| <b>Turkeys</b>               |           |             |          |            |                |          |               |            |              |
| breeding flocks, unspecified |           |             |          |            | 1              |          |               |            |              |
| - during production period   |           |             |          |            |                |          |               |            |              |
| unspecified                  |           | 1           |          |            |                |          |               |            |              |

**Footnote**

Remarks: Routine sampling, testing and Microbiology. Source: RVL and RNLS

**Table 3.2.3 Salmonella sp. in non-commercial poultry and birds**

|                      | Source of information | Remarks | Epidemiological unit | Flocks tested | Flocks positive | S. Typhimurium | Salmonella spp. | S. Enteritidis |
|----------------------|-----------------------|---------|----------------------|---------------|-----------------|----------------|-----------------|----------------|
| <b>Pigeons</b>       | NRLS,RVL              |         | Animal               | 20            | 2               | 1              |                 | 1              |
| <b>Pheasants</b>     | NRLS                  |         | Animal               | 1             | 0               |                |                 |                |
| <b>Partridges</b>    | NRLS,RVL              |         | Animal               | 9             | 0               |                |                 |                |
| <b>Ostriches</b>     | NRLS,RVL              |         | Animal               | 10            | 0               |                |                 |                |
| <b>Wildlife</b>      |                       |         |                      |               |                 |                |                 |                |
| other                | RVL                   |         | Animal               | 6             | 1               |                | 1               |                |
| <b>Other poultry</b> | NRLS,RVL              |         | Animal               | 35            | 12              | 12             |                 |                |

**Table 3.2.4 Salmonella sp. in animals ( non poultry)**

|                                | Source of information | Remarks | Epidemiological unit | Units tested | Units positive | S. Dublin | S. Corvallis | S. Litchfield | Salmonella spp. | S. Enteritidis | S. Typhimurium |
|--------------------------------|-----------------------|---------|----------------------|--------------|----------------|-----------|--------------|---------------|-----------------|----------------|----------------|
| <b>Cattle (bovine animals)</b> | RNLS, RVL             |         | Animal               | 29           | 3              | 2         | 1            |               |                 |                |                |
| <b>Sheep</b>                   | RNLS, RVL             |         | Animal               | 33           | 0              |           |              |               |                 |                |                |
| <b>Goats</b>                   | RNLS, RVL             |         | Animal               | 41           | 1              |           |              |               |                 |                | 1              |
| <b>Pigs</b>                    |                       |         |                      |              |                |           |              |               |                 |                |                |
| fattening pigs                 | RNLS, RVL             |         | Herd                 | 3            | 0              |           |              |               |                 |                |                |
| unspecified                    | RNLS, RVL             |         | Animal               | 7            | 0              |           |              |               |                 |                |                |
| <b>Rabbits</b>                 | RNLS, RVL             |         | Herd                 | 12           | 1              |           |              |               |                 |                | 1              |
| <b>Farmed deer</b>             | RNLS, RVL             |         | Animal               | 1            | 0              |           |              |               |                 |                |                |
| <b>Pet animals</b>             |                       |         |                      |              |                |           |              |               |                 |                |                |
| turtles                        | RNLS, RVL             |         | Animal               | 5            | 4              |           |              | 1             | 2               |                | 1              |

**Footnote**

Remarks: clinical examination, pathological material-offal

## 2.1.5. Salmonella in feedstuffs

**Table 3.1.1 Salmonella sp. in feed material of animal origin**

|                                              | Source of information | Remarks | Epidemiological unit | Sample weight | Units tested | Units positive | S. Enteritidis | S. Typhimurium | S. Tennessee | S. Carno |
|----------------------------------------------|-----------------------|---------|----------------------|---------------|--------------|----------------|----------------|----------------|--------------|----------|
| <b>Feed material of land animal origin</b>   |                       |         |                      |               |              |                |                |                |              |          |
| Meat meal                                    | RVL                   |         | S                    |               | 8            | 0              |                |                |              |          |
| Meat and bone meal                           | RVL                   |         | S                    |               | 13           | 0              |                |                |              |          |
| Bone meal                                    | RVL                   |         | S                    |               | 2            | 0              |                |                |              |          |
| Poultry offal meal                           | RVL                   |         | B                    |               | 244          | 1              |                |                |              | 1        |
| Feather meal                                 | RVL                   |         | S                    |               | 9            | 0              |                |                |              |          |
| Animal fat                                   | RVL                   |         | S                    |               | 1            | 0              |                |                |              |          |
| <b>Feed material of marine animal origin</b> |                       |         |                      |               |              |                |                |                |              |          |
| Fish meal                                    | RVL                   |         | S                    |               | 43           | 2              |                |                | 2            |          |
| Fish oil                                     | RVL                   |         | S                    |               | 1            | 0              |                |                |              |          |
| Fish silage                                  | RVL                   |         | S                    |               | 35           | 0              |                |                |              |          |
| other fish products                          | RVL                   |         | B                    |               | 2            | 0              |                |                |              |          |
| <b>Compound feedingstuffs for cattle</b>     | RVL                   |         | S                    |               | 9            | 0              |                |                |              |          |
| <b>Bioproteins</b>                           | RVL                   |         | B                    |               | 1            | 0              |                |                |              |          |

### Footnote

Remarks: Targeted and Routine sampling, Serotyping by the National Reference Laboratory for Salmonella

**Table 3.1.2 Salmonella sp. in feed of vegetable origin**

|                                                  | Source of information | Remarks | Epidemiological unit | Sample weight | Units tested | Units positive | S. Typhimurium | S. Enteritidis | S. Tomegbe | S. Agona |
|--------------------------------------------------|-----------------------|---------|----------------------|---------------|--------------|----------------|----------------|----------------|------------|----------|
| <b>Feed material of cereal grain origin</b>      |                       |         |                      |               |              |                |                |                |            |          |
| Wheat derived                                    | RVL                   |         | S                    |               | 11           | 0              |                |                |            |          |
| Maize                                            | CVIA                  |         | S                    |               | 14           | 0              |                |                |            |          |
| <b>Feed material of oil seed or fruit origin</b> |                       |         |                      |               |              |                |                |                |            |          |
| Soya (bean) derived                              | CVIA                  |         | B                    |               | 25           | 1              |                |                |            | 1        |
| other oil seeds derived                          | RVL                   |         | S                    |               | 31           | 0              |                |                |            |          |
| <b>other feed material</b>                       |                       |         |                      |               |              |                |                |                |            |          |
| Forages and roughages                            | RVL                   |         | B                    |               | 9            | 1              |                |                | 1          |          |

Table 3.1.3 Salmonella sp. in compound feedingstuff

|                                                                     | Source of information | Remarks          | Epidemiological unit | Sample weight | Units tested | Units positive | S. Enteritidis | S. Typhimurium | S. Livingstone | S. Tennessee | S. Mbandaka | S. 3,15:-:- | S. Oranienburg | S. Newport |
|---------------------------------------------------------------------|-----------------------|------------------|----------------------|---------------|--------------|----------------|----------------|----------------|----------------|--------------|-------------|-------------|----------------|------------|
| Compound feedingstuffs for poultry (non specified)<br>Final product |                       |                  | S                    |               | 175          | 11             | 0              | 1              | 2              | 1            | 1           | 1           | 4              | 1          |
|                                                                     |                       | ISO 6571         |                      |               |              |                |                |                |                |              |             |             |                |            |
| Compound feedingstuffs for poultry - broilers<br>Final Product      |                       |                  | S                    |               | 1            | 0              |                |                |                |              |             |             |                |            |
|                                                                     |                       | ISO 6580         |                      |               |              |                |                |                |                |              |             |             |                |            |
| Pet food                                                            |                       |                  |                      |               |              |                |                |                |                |              |             |             |                |            |
| Dog snacks (pig ears, chewing bones)                                |                       | Routing sampling | S                    |               | 12           | 0              |                |                |                |              |             |             |                |            |
| Compound feedingstuffs for fish                                     |                       | Routing sampling | S                    |               | 10           | 0              |                |                |                |              |             |             |                |            |
| Compound feedingstuffs for sheep                                    |                       | Routing sampling | S                    |               | 9            | 0              |                |                |                |              |             |             |                |            |

#### **2.1.6. *Salmonella* serovars and phagetype distribution**

The methods of collecting, isolating and testing of the *Salmonella* isolates are described in the chapters above respectively for each animal species, foodstuffs and humans. The serotype and phagetype distributions can be used to investigate the sources of the *Salmonella* infections in humans. Findings of same serovars and phagetypes in human cases and in foodstuffs or animals may indicate that the food category or animal species in question serves as a source of human infections. However as information is not available from all potential sources of infections, conclusions have to be drawn with caution.

Table 3.3.3 Salmonella serovars in animals

| Serovars                             |    | Cattle (bovine animals) |      | Pigs |      | Gallus gallus |      | Other poultry |      | Rabbits |      | Pet animals - turtles |      |
|--------------------------------------|----|-------------------------|------|------|------|---------------|------|---------------|------|---------|------|-----------------------|------|
| Sources of isolates                  | N= | M(*)                    | C(*) | M(*) | C(*) | M(*)          | C(*) | M(*)          | C(*) | M(*)    | C(*) | M(*)                  | C(*) |
| Number of isolates in the laboratory | N= |                         | 4    |      |      | 70            | 7    |               | 1    | 4       | 1    | 1                     |      |
| Number of isolates serotyped         | N= |                         | 4    |      |      | 92            | 7    |               | 1    | 2       | 1    | 1                     |      |
| Number of isolates per type          |    |                         |      |      |      |               |      |               |      |         |      |                       |      |
| S. Anatum                            |    |                         |      |      |      | 1             | 1    |               |      |         |      |                       |      |
| S. Blockley                          |    |                         |      |      |      | 21            | 2    |               |      |         |      |                       |      |
| S. Boecker                           |    |                         |      |      |      | 1             | 0    |               |      |         |      |                       |      |
| S. Bovismorbificans                  |    |                         |      |      |      | 1             | 0    |               |      |         |      |                       |      |
| S. Bredeney                          |    |                         |      |      |      | 2             | 0    |               |      |         |      |                       |      |
| S. Carno                             |    |                         |      |      |      | 1             | 0    |               |      |         |      |                       |      |
| S. Corvallis                         |    |                         | 3    |      |      |               |      |               |      |         |      |                       |      |
| S. Dublin                            |    |                         | 1    |      |      |               |      |               |      |         |      |                       |      |
| S. Enteritidis                       |    |                         |      |      |      | 8             | 0    |               |      |         |      |                       |      |
| S. Hadar                             |    |                         |      |      |      | 1             | 0    |               |      |         |      |                       |      |
| S. Indiana                           |    |                         |      |      |      | 1             | 0    |               |      |         |      |                       |      |
| S. Lexington                         |    |                         |      |      |      | 1             | 0    |               |      |         |      |                       |      |
| S. Litchfield                        |    |                         |      |      |      |               |      |               |      |         |      | 1                     |      |
| S. Livingstone                       |    |                         |      |      |      | 11            | 2    |               |      |         |      |                       |      |
| S. London                            |    |                         |      |      |      | 7             | 0    |               |      |         |      |                       |      |
| S. Manhattan                         |    |                         |      |      |      | 1             | 0    |               |      |         |      |                       |      |

[illegible]

## Footnote

(\*) M : Monitor, C : Clinical

Table 3.3.4 Salmonella serovars in food

| Serovars                                  | Bovine meat |      | Pig meat |      | Broiler meat |      | Other poultry |      | Other products of animal origin |      |      |
|-------------------------------------------|-------------|------|----------|------|--------------|------|---------------|------|---------------------------------|------|------|
|                                           | M(*)        | C(*) | M(*)     | C(*) | M(*)         | C(*) | M(*)          | C(*) | M(*)                            | C(*) | C(*) |
| Sources of isolates                       |             |      |          |      |              |      |               |      |                                 |      |      |
| Number of isolates in the laboratory      | N=          |      |          |      |              |      |               |      |                                 |      |      |
| Number of isolates serotyped              | N=          |      |          |      |              |      |               |      |                                 |      |      |
|                                           |             |      |          |      |              |      |               |      |                                 |      |      |
| Number of isolates per type               |             |      |          |      |              |      |               |      |                                 |      |      |
| S. Amoutive (1)                           |             |      |          |      |              |      |               |      |                                 |      | 1    |
| S. Anatum                                 |             |      |          |      |              |      |               |      | 2                               |      |      |
| S. Blockley                               |             |      |          |      |              |      |               |      | 21                              |      |      |
| S. Enteritidis                            |             |      |          |      |              |      |               |      | 1                               |      | 2    |
| S. Hadar                                  |             |      |          |      |              |      |               |      | 4                               |      |      |
| S. Indiana                                |             |      |          |      |              |      |               |      | 3                               |      |      |
| S. Livingstone                            |             |      |          |      |              |      |               |      | 4                               |      |      |
| S. Meleagridis                            |             |      |          |      |              |      |               |      | 3                               |      |      |
| S. Muenchen                               |             |      |          |      |              |      |               |      | 2                               |      |      |
| S. Schwerin                               |             |      |          |      |              |      |               |      | 1                               |      |      |
| S. Typhimurium                            |             |      |          |      |              |      |               |      | 6                               |      |      |
| S. Virchow                                |             |      |          |      |              |      |               |      | 5                               |      |      |
| S. enterica subsp. diarizonae             |             |      |          |      |              |      |               |      |                                 |      | 2    |
| Total of typed <i>Salmonella</i> isolates |             |      |          |      |              |      |               |      |                                 |      |      |

[illegible]

(1) : From fish products

## Footnote

(\*) M : Monitor, C : Clinical

### **2.1.7. Antimicrobial resistance in *Salmonella* isolates**

Antimicrobial resistance is the ability of certain microorganisms to survive or grow in the presence of a given concentration of antimicrobial agent that usually would kill or inhibit the microorganism species in question. Antimicrobial resistant *Salmonella* strains may be transferred from animals or foodstuffs to humans.

#### **A. Antimicrobial resistance in *Salmonella* in poultry**

##### **Additional information**

There is no official national program in force. Efforts commenced to develop a reporting system of antimicrobial resistance in various animal species. The results are limited and the only available information is provided from the National Reference Laboratory of Animal Salmonellosis. The year 2004 a significant improvement was observed in reporting Antimicrobial susceptibility (for both quantitative and qualitative data) in several *Salmonella* serovars which are presented in the designated tables of the monitoring system.

Table Antimicrobial susceptibility testing of *S. Agona* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Agona                                                                                                                            |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |  |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |

Table Antimicrobial susceptibility testing of *S. Albany* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Albany                                                                                                                           |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R   | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1   | 100% | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 1   | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 1   | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 1   | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |  |
| Quinolones                                                                                                                          |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1   | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1   | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1   | 100  | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1   | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1   | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0%   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |     |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1   | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |

Table Antimicrobial susceptibility testing of *S. Anatum* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Anatum                                                                                                                           |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |  |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |  |

**Table Antimicrobial susceptibility testing of *S. Bareilly* in Poultry meat - quantitative data [Diffusion method]**

[illegible]

Table Antimicrobial susceptibility testing of *S. Blockley* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|--|----|--------|----|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S. Blockley                                                                                                                         |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gallus gallus                                                                                                                       |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                |  | yes |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      |  | 35  |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Antimicrobials:                                                                                                                     |  |     |  | N  | %R     | 6  | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Tetracycline                                                                                                                        |  |     |  | 17 | 88,24% | 9  | 5 | 1 |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Amphenicols                                                                                                                         |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     |  |     |  | 17 | 76,47  | 13 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 2  | 1  |    |    |    |    |    |    |    |    |    |
| Cephalosporin                                                                                                                       |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cefotaxim                                                                                                                           |  |     |  | 8  | 0      |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 1  | 1  | 2  | 1  |    | 1  | 1  |    |
| Fluoroquinolones                                                                                                                    |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       |  |     |  | 17 | 0      |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 1  |    | 1  | 1  | 3  | 2  | 4  | 4  |    |
| Quinolones                                                                                                                          |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      |  |     |  | 17 | 58,22  |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 4  |    |    |    | 2  |    |    |    |    |    |    |    |
| Trimethoprim                                                                                                                        |  |     |  | 13 | 0%     |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 3  | 2  | 4  | 3  |    |    |    |    |
| Sulfonamides                                                                                                                        |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         |  |     |  | 17 | 0      |    |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  | 1  | 2  | 4  | 6  | 2  | 1  |    |    |    |    |    |    |    |    |    |
| Aminoglycosides                                                                                                                     |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        |  |     |  | 16 | 81,25  | 1  | 1 | 4 | 6 | 1  |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          |  |     |  | 17 | 0      |    |   |   |   |    |    |    |    |    |    | 1  | 4  | 6  | 5  |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |
| Kanamycin                                                                                                                           |  |     |  | 16 | 87,5   | 14 |   |   |   |    |    |    |    |    |    | 1  |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim + sulfonamides                                                                                                         |  |     |  | 17 | 0%     |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 1  | 4  | 2  | 6  | 2  |    |    |    |    |    |
| Penicillins                                                                                                                         |  |     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          |  |     |  | 17 | 41,12  | 7  |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    | 2  | 4  | 3  |    |    |    |    |    |    |    |    |

Table Antimicrobial susceptibility testing of *S. Blockley* in Poultry meat - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|----|-------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| <i>S. Blockley</i>                                                                                                                  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Poultry meat                                                                                                                        |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                | no |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      | 17 |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Antimicrobials:                                                                                                                     | N  | %R    | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| <b>Tetracycline</b>                                                                                                                 | 3  | 100%  | 1 | 2 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Amphenicols</b>                                                                                                                  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     | 3  | 100   | 3 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Cephalosporin</b>                                                                                                                |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cefotaxim                                                                                                                           | 1  | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |
| <b>Fluoroquinolones</b>                                                                                                             |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       | 3  | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    | 1  |    |    |    |    |    |    |
| <b>Quinolones</b>                                                                                                                   |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      | 3  | 66.66 | 2 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Trimethoprim</b>                                                                                                                 |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     | 2  | 0%    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |
| <b>Sulfonamides</b>                                                                                                                 |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         | 3  | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  | 1  |    |    |    |    |    |    |    |    |    |    |
| <b>Aminoglycosides</b>                                                                                                              |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        | 3  | 100   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          | 3  | 100   |   |   |   |   |    |    |    |    |    |    |    |    |    | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kanamycin                                                                                                                           | 2  | 100   | 2 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Trimethoprim + sulfonamides</b>                                                                                                  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     | 3  | 0%    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 2  |    |    |    |    |
| <b>Penicillins</b>                                                                                                                  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          | 3  | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 1  |    |    |    |    |    |    |    |    |    |

Table Antimicrobial susceptibility testing of *S. Bovismorbificans* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S. Bovismorbificans                                                                                                                 |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Table Antimicrobial susceptibility testing of *S. Braenderup* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Braenderup                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    | 1  |  |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |  |

Table Antimicrobial susceptibility testing of *S. Bredeney* in Turkey - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|----|------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S. Bredeney                                                                                                                         |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Turkeys                                                                                                                             |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                | no |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      | 1  |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Antimicrobials:                                                                                                                     | N  | %R   | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Tetracycline                                                                                                                        | 1  | 100% |   | 1 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Amphenicols                                                                                                                         |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     | 1  | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |
| Florfenicol                                                                                                                         |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Fluoroquinolones                                                                                                                    |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       | 1  | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |
| Quinolones                                                                                                                          |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      | 1  | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim                                                                                                                        | 1  | 0%   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |
| Sulfonamides                                                                                                                        |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         | 1  | 100  |   | 1 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Aminoglycosides                                                                                                                     |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        | 1  | 100  |   | 1 |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          | 1  | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kanamycin                                                                                                                           | 1  | 100  |   | 1 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim + sulfonamides                                                                                                         | 1  | 0%   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |
| Penicillins                                                                                                                         |    |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          | 1  | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |

Table Antimicrobial susceptibility testing of *S. Bredeney* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|-----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| <i>S. Bredeney</i>                                                                                                                  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <i>Gallus gallus</i>                                                                                                                |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                | yes |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      | 3   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     | N   | %R | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| <b>Antimicrobials:</b>                                                                                                              | 1   | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Tetracycline</b>                                                                                                                 |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Amphenicols</b>                                                                                                                  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |
| <b>Cephalosporin</b>                                                                                                                |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cefotaxim                                                                                                                           | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Fluoroquinolones</b>                                                                                                             |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| <b>Quinolones</b>                                                                                                                   |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Sulfonamides</b>                                                                                                                 |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |
| <b>Aminoglycosides</b>                                                                                                              |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kanamycin                                                                                                                           | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim + sulfonamides                                                                                                         | 1   | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| <b>Penicillins</b>                                                                                                                  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |

Table Antimicrobial susceptibility testing of *S. Cerro* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S. Cerro                                                                                                                            |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Gallus gallus                                                                                                                       |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Isolates out of a monitoring program                                                                                                |  | yes |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Number of isolates available in the laboratory                                                                                      |  | 4   |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|                                                                                                                                     |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Antimicrobials:                                                                                                                     |  | N   | %R | 0% | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Tetracycline                                                                                                                        |  | 3   | 0% |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Amphenicols                                                                                                                         |  | 3   | 0  |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Cephalosporin                                                                                                                       |  | 3   | 0  |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Cefotaxim                                                                                                                           |  | 3   | 0  |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Fluoroquinolones                                                                                                                    |  | 3   | 0  |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Ciprofloxacin                                                                                                                       |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Enrofloxacin                                                                                                                        |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Quinolones                                                                                                                          |  | 3   | 0  |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Nalidixic acid                                                                                                                      |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Sulfonamides                                                                                                                        |  | 3   | 0  |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Sulfonamide                                                                                                                         |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Aminoglycosides                                                                                                                     |  | 3   | 0  |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Streptomycin                                                                                                                        |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Gentamicin                                                                                                                          |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Kanamycin                                                                                                                           |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Trimethoprim + sulfonamides                                                                                                         |  | 3   | 0% |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Penicillins                                                                                                                         |  | 3   | 0  |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Ampicillin                                                                                                                          |  |     |    |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

**Table 3.2.5.2 Antimicrobial susceptibility testing of S. Enteritidis in animals**

|                                                | S. Enteritidis          |    |      |    |               |        |         |    |
|------------------------------------------------|-------------------------|----|------|----|---------------|--------|---------|----|
|                                                | Cattle (bovine animals) |    | Pigs |    | Gallus gallus |        | Turkeys |    |
| Isolates out of a monitoring program           |                         |    |      |    | no            |        |         |    |
| Number of isolates available in the laboratory |                         |    |      |    | 38            |        |         |    |
|                                                |                         |    |      |    |               |        |         |    |
| Antimicrobials:                                | N                       | %R | N    | %R | N             | %R     | N       | %R |
| Tetracycline                                   |                         |    |      |    | 26            | 0%     |         |    |
| Amphenicols                                    |                         |    |      |    |               |        |         |    |
| Chloramphenicol                                |                         |    |      |    | 26            | 0%     |         |    |
| Cephalosporin                                  |                         |    |      |    |               |        |         |    |
| Cefotaxim                                      |                         |    |      |    | 18            | 0%     |         |    |
| Fluoroquinolones                               |                         |    |      |    |               |        |         |    |
| Ciprofloxacin                                  |                         |    |      |    | 26            | 0%     |         |    |
| Quinolones                                     |                         |    |      |    |               |        |         |    |
| Nalidixic acid                                 |                         |    |      |    | 26            | 23,08% |         |    |
| Trimethoprim                                   |                         |    |      |    | 12            | 0%     |         |    |
| Sulfonamides                                   |                         |    |      |    |               |        |         |    |
| Sulfonamide                                    |                         |    |      |    | 26            | 0%     |         |    |
| Aminoglycosides                                |                         |    |      |    |               |        |         |    |
| Streptomycin                                   |                         |    |      |    | 25            | 0%     |         |    |
| Gentamicin                                     |                         |    |      |    | 26            | 0%     |         |    |
| Kanamycin                                      |                         |    |      |    | 26            | 0%     |         |    |
| Trimethoprim + sulfonamides                    |                         |    |      |    | 26            | 0%     |         |    |
| Penicillins                                    |                         |    |      |    |               |        |         |    |
| Ampicillin                                     |                         |    |      |    | 26            | 0%     |         |    |
|                                                |                         |    |      |    |               |        |         |    |
| Number of multiresistant isolates              |                         |    |      |    |               |        |         |    |
| fully sensitives                               |                         |    |      |    | 20            | 76,92% |         |    |
| resistant to 1 antimicrobial                   |                         |    |      |    | 6             | 23,08% |         |    |

Table Antimicrobial susceptibility testing of *S. Enteritidis* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|--|----|-------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Enteritidis                                                                                                                      |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 38  |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  |     |  | N  | %R    | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  |     |  | 26 | 0%    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 5  | 4  | 8  | 6  | 3  |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  |     |  | 26 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 5  | 7  | 6  | 6  |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  |     |  | 18 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 3  | 1  | 4  | 3  | 3  | 2  |    |  |
| Fluoroquinolones                                                                                                                    |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  |     |  | 26 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 1  | 1  | 1  | 1  | 4  | 2  | 4  | 4  | 2  |  |
| Enrofloxacin                                                                                                                        |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  | 6  | 7  | 1  | 3  |    |    |    |    |    |    |    |    |  |
| Quinolones                                                                                                                          |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  |     |  | 26 | 23,08 |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  |     |  | 26 | 0     |   |   |   |   |    |    |    |    |    |    |    | 1  | 1  |    | 2  | 1  | 7  | 3  | 6  | 5  |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  |     |  | 25 | 0     |   |   |   |   |    |    |    |    |    |    |    | 2  | 5  | 10 | 6  | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  |     |  | 26 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    | 4  | 10 | 9  | 3  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  |     |  | 26 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  | 6  | 8  | 4  | 1  |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  |     |  | 26 | 0%    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 1  | 3  | 3  | 8  | 5  | 3  | 2  |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  |     |  | 26 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 5  | 3  | 8  | 5  | 4  |    |    |    |    |    |    |    |  |

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Poultry meat - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----|-----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Enteritidis                                                                                                                      |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Poultry meat                                                                                                                        |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | no |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1  |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N  | %R  | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1  | 0%  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 1  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 1  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 1  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |  |
| Quinolones                                                                                                                          |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1  | 100 | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim                                                                                                                        |  | 1  | 0%  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1  | 0%  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |

Table Antimicrobial susceptibility testing of *S. Enteritidis* in Table eggs - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S. Enteritidis                                                                                                                      |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Table eggs                                                                                                                          |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                | no |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     | 2  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Antimicrobials:                                                                                                                     | N  | %R | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Tetracycline                                                                                                                        | 1  | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |
| Amphenicols                                                                                                                         |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     | 1  | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| Fluoroquinolones                                                                                                                    |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       | 1  | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |
| Quinolones                                                                                                                          |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      | 1  | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim                                                                                                                        | 1  | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |
| Sulfonamides                                                                                                                        |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         | 1  | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |
| Aminoglycosides                                                                                                                     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        | 1  | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          | 1  | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim + sulfonamides                                                                                                         | 1  | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |
| Penicillins                                                                                                                         |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          | 1  | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |

Table Antimicrobial susceptibility testing of *S. Hadar* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|--|---|-----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|--|
| S. Hadar                                                                                                                            |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Gallus gallus                                                                                                                       |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Isolates out of a monitoring program                                                                                                |  | yes |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Number of isolates available in the laboratory                                                                                      |  | 4   |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
|                                                                                                                                     |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Antimicrobials:                                                                                                                     |  |     |  | N | %R  | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |   |  |
| Tetracycline                                                                                                                        |  |     |  | 4 | 75% | 1 | 1 | 1 |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Amphenicols                                                                                                                         |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Chloramphenicol                                                                                                                     |  |     |  | 4 | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  | 1  | 1  |    |    |    |    |    |    |    |    |    |   |  |
| Cephalosporin                                                                                                                       |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Cefotaxim                                                                                                                           |  |     |  | 2 | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    | 1 |  |
| Fluoroquinolones                                                                                                                    |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Ciprofloxacin                                                                                                                       |  |     |  | 4 | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  | 1  |    |    |    |    |    |    |    | 1 |  |
| Quinolones                                                                                                                          |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Nalidixic acid                                                                                                                      |  |     |  | 4 | 75  | 3 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |   |  |
| Trimethoprim                                                                                                                        |  |     |  | 2 | 0%  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |   |  |
| Sulfonamides                                                                                                                        |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Sulfonamide                                                                                                                         |  |     |  | 4 | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    | 1  | 1  |    |    |    |    |    |    |   |  |
| Aminoglycosides                                                                                                                     |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Streptomycin                                                                                                                        |  |     |  | 4 | 75  |   |   | 1 | 1 | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Gentamicin                                                                                                                          |  |     |  | 4 | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  | 3  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Kanamycin                                                                                                                           |  |     |  | 4 | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    | 3  |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Trimethoprim + sulfonamides                                                                                                         |  |     |  | 4 | 0%  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 1  | 2  |    |    |    |    |   |  |
| Penicillins                                                                                                                         |  |     |  |   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Ampicillin                                                                                                                          |  |     |  | 4 | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  | 1  | 1  |    |    |    |    |    |    |   |  |

Table Antimicrobial susceptibility testing of *S. Hadar* in Poultry meat - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----|-----|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|
| S. Hadar                                                                                                                            |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Poultry meat                                                                                                                        |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Isolates out of a monitoring program                                                                                                |  | no |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Number of isolates available in the laboratory                                                                                      |  | 3  |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Antimicrobials:                                                                                                                     |  | N  | %R  | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |  |
| Tetracycline                                                                                                                        |  | 2  | 50% | 1 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Amphenicols                                                                                                                         |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Chloramphenicol                                                                                                                     |  | 2  | 0   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 1  |    |    |    |    |    |    |    |    |    |  |  |
| Cephalosporin                                                                                                                       |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Cefotaxim                                                                                                                           |  | 2  | 0   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |  |  |
| Fluoroquinolones                                                                                                                    |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Ciprofloxacin                                                                                                                       |  | 2  | 0   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 1  |    |    |    |    |    |    |    |    |    |  |  |
| Quinolones                                                                                                                          |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Nalidixic acid                                                                                                                      |  | 2  | 100 | 2 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Trimethoprim                                                                                                                        |  | 1  | 0%  |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |  |  |
| Sulfonamides                                                                                                                        |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Sulfonamide                                                                                                                         |  | 2  | 0   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |  |  |
| Aminoglycosides                                                                                                                     |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Streptomycin                                                                                                                        |  | 2  | 50  | 1 |   |   |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Gentamicin                                                                                                                          |  |    |     |   |   |   |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |  |  |
| Kanamycin                                                                                                                           |  | 2  | 0   |   |   |   |    |    |    |    |    |    |    |    | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Trimethoprim + sulfonamides                                                                                                         |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |    |    |    |    |    |    |  |  |
| Penicillins                                                                                                                         |  |    |     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Ampicillin                                                                                                                          |  | 2  | 0   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    | 1  |    |  |  |

Table Antimicrobial susceptibility testing of *S. Heidelberg* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S. Heidelberg                                                                                                                       |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gallus gallus                                                                                                                       |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                |  | yes |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Antimicrobials:                                                                                                                     |  | N   | %R | 0% | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Tetracycline                                                                                                                        |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |
| Amphenicols                                                                                                                         |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |
| Cephalosporin                                                                                                                       |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cefotaxim                                                                                                                           |  | 1   | 0  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |
| Fluoroquinolones                                                                                                                    |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |
| Quinolones                                                                                                                          |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamides                                                                                                                        |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         |  | 1   | 0  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Aminoglycosides                                                                                                                     |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        |  | 1   | 0  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          |  | 1   | 0  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kanamycin                                                                                                                           |  | 1   | 0  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |
| Penicillins                                                                                                                         |  |     |    |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          |  | 1   | 0  |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |

Table Antimicrobial susceptibility testing of *S. Idikan* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S. Idikan                                                                                                                           |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Antimicrobials:                                                                                                                     |  | N   | %R | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cephalosporin                                                                                                                       |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cefotaxim                                                                                                                           |  | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim + sulfonamides                                                                                                         |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     |  |     |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

Table Antimicrobial susceptibility testing of *S. Indiana* in Poultry meat - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
|-------------------------------------------------------------------------------------------------------------------------------------|----|----|---|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|--|---|
| S. Indiana                                                                                                                          |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Poultry meat                                                                                                                        |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Isolates out of a monitoring program                                                                                                | no |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Number of isolates available in the laboratory                                                                                      | 13 |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
|                                                                                                                                     |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Antimicrobials:                                                                                                                     | N  | %R | 4 | 0% | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |   |  |   |
| Tetracycline                                                                                                                        | 4  | 0% |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 2  |    |    | 2  |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Amphenicols                                                                                                                         |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Chloramphenicol                                                                                                                     | 4  | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  | 1  |    |    |    |    | 1  |    |    |    |    |    |    |   |  |   |
| Cephalosporin                                                                                                                       |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Cefotaxim                                                                                                                           | 4  | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 1  |    |    |    |   |  | 2 |
| Fluoroquinolones                                                                                                                    |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Ciprofloxacin                                                                                                                       | 4  | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 2  | 1 |  |   |
| Quinolones                                                                                                                          |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Nalidixic acid                                                                                                                      | 4  | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Trimethoprim                                                                                                                        | 2  | 0% |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |   |  |   |
| Sulfonamides                                                                                                                        |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Sulfonamide                                                                                                                         | 4  | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    | 1  |    |    |    |    | 1  |    |    |    |    |   |  |   |
| Aminoglycosides                                                                                                                     |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Streptomycin                                                                                                                        | 4  | 0  |   |    |   |   |   |   |    |    |    |    |    | 2  |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Gentamicin                                                                                                                          | 4  | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  | 1  | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Kanamycin                                                                                                                           | 4  | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    | 2  |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Trimethoprim + sulfonamides                                                                                                         | 4  | 0% |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
|                                                                                                                                     |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Penicillins                                                                                                                         |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
| Ampicillin                                                                                                                          | 4  | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |
|                                                                                                                                     |    |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |   |

56

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|--|---|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|--|
| S. Infantis                                                                                                                         |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Gallus gallus                                                                                                                       |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Isolates out of a monitoring program                                                                                                |  | yes |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Number of isolates available in the laboratory                                                                                      |  | 6   |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
|                                                                                                                                     |  |     |  | N | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |   |  |
| Antimicrobials:                                                                                                                     |  |     |  | 6 | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    | 2  | 1  | 1  | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Tetracycline                                                                                                                        |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Amphenicols                                                                                                                         |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Chloramphenicol                                                                                                                     |  |     |  | 6 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Cephalosporin                                                                                                                       |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Cefotaxim                                                                                                                           |  |     |  | 6 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    | 1  | 3  |    |    |    |   |  |
| Fluoroquinolones                                                                                                                    |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Ciprofloxacin                                                                                                                       |  |     |  | 6 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  | 1  | 2 |  |
| Quinolones                                                                                                                          |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Nalidixic acid                                                                                                                      |  |     |  | 6 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 1  | 1  | 2 |  |
| Sulfonamides                                                                                                                        |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Sulfonamide                                                                                                                         |  |     |  | 6 | 0  |   |   |   |   |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Aminoglycosides                                                                                                                     |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Streptomycin                                                                                                                        |  |     |  | 6 | 0  |   |   |   |   |    |    |    |    |    |    |    | 4  | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Gentamicin                                                                                                                          |  |     |  | 6 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    | 1  | 4  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Kanamycin                                                                                                                           |  |     |  | 6 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    | 1  | 1  | 3  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Trimethoprim + sulfonamides                                                                                                         |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |    |    |    | 1  | 1  | 1  | 1  |    |    |    |   |  |
| Penicillins                                                                                                                         |  |     |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Ampicillin                                                                                                                          |  |     |  | 6 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 3  | 2  |   |  |

Table Antimicrobial susceptibility testing of *S. Infantis* in Poultry meat - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Infantis                                                                                                                         |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Poultry meat                                                                                                                        |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | no |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1  |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N  | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1  | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 1  | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 1  | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |
| Fluoroquinolones                                                                                                                    |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 1  | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |
| Quinolones                                                                                                                          |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1  | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1  | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1  | 0  |   |   |   |   |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1  | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1  | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1  | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |  |
| Penicillins                                                                                                                         |  |    |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1  | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |

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[illegible]

Table Antimicrobial susceptibility testing of *S. Livingstone* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|--|----|-------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S. Livingstone                                                                                                                      |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gallus gallus                                                                                                                       |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                |  | yes |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      |  | 21  |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Antimicrobials:                                                                                                                     |  |     |  | N  | %R    | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Tetracycline                                                                                                                        |  |     |  | 12 | 8,33% |   | 1 |   |   |    |    |    |    |    |    |    |    | 1  |    |    | 4  | 2  | 1  | 2  | 1  |    |    |    |    |    |    |    |    |    |    |
| Amphenicols                                                                                                                         |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     |  |     |  | 12 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  | 2  | 1  | 3  | 2  | 3  |    |    |    |    |    |    |    |    |    |    |
| Cephalosporin                                                                                                                       |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cefotaxim                                                                                                                           |  |     |  | 5  | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    | 2  |    |    |    | 1  |
| Fluoroquinolones                                                                                                                    |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       |  |     |  | 12 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 1  | 3  | 3  |    | 2  |
| Quinolones                                                                                                                          |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      |  |     |  | 12 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 3  | 4  | 3  | 1  |    |    |    |    |    |    |    |    |    |
| Trimethoprim                                                                                                                        |  |     |  | 8  | 0%    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 2  | 2  |    |    |    |
| Sulfonamides                                                                                                                        |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         |  |     |  | 12 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  | 2  | 1  | 2  | 3  | 2  |    | 1  |    |    |    |    |    |    |    |    |
| Aminoglycosides                                                                                                                     |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        |  |     |  | 12 | 0     |   |   |   |   |    |    |    |    |    |    |    | 6  | 4  | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          |  |     |  | 12 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    | 3  | 5  | 4  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kanamycin                                                                                                                           |  |     |  | 12 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    | 1  | 3  | 2  | 5  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim + sulfonamides                                                                                                         |  |     |  | 12 | 0%    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5  |    |    | 3  | 1  | 3  |    |    |    |    |    |
| Penicillins                                                                                                                         |  |     |  |    |       |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          |  |     |  | 12 | 0     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 2  | 6  | 2  | 1  |    |    |    |    |    |    |    |    |

Table Antimicrobial susceptibility testing of *S. London* in *Gallus gallus* - quantitative data [Diffusion method][illegible]

Table Antimicrobial susceptibility testing of *S. Manhattan* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Manhattan                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |
| Cefotaxim                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |  |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Quinolones                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |  |
| Penicillins                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |  |

Table Antimicrobial susceptibility testing of *S. Meleagridis* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| S. Meleagridis                                                                                                                      |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Gallus gallus                                                                                                                       |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Isolates out of a monitoring program                                                                                                |  | yes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Number of isolates available in the laboratory                                                                                      |  | 10  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                                                                                                     |  |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table Antimicrobial susceptibility testing of *S. Meleagridis* in Poultry meat - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----|--|---|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|---|
| S. Meleagridis                                                                                                                      |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Poultry meat                                                                                                                        |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Isolates out of a monitoring program                                                                                                |  | no |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Number of isolates available in the laboratory                                                                                      |  | 6  |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
|                                                                                                                                     |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Antimicrobials:                                                                                                                     |  |    |  | N | %R | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |   |   |
| Tetracycline                                                                                                                        |  |    |  | 1 | 0% | 1 |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Amphenicols                                                                                                                         |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Chloramphenicol                                                                                                                     |  |    |  | 1 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Cephalosporin                                                                                                                       |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Cefotaxim                                                                                                                           |  |    |  | 1 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |   |
| Quinolones                                                                                                                          |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Nalidixic acid                                                                                                                      |  |    |  | 1 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |   |   |
| Trimethoprim                                                                                                                        |  |    |  | 1 | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Sulfonamides                                                                                                                        |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Sulfonamide                                                                                                                         |  |    |  | 1 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |   |
| Aminoglycosides                                                                                                                     |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Streptomycin                                                                                                                        |  |    |  | 1 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Gentamicin                                                                                                                          |  |    |  | 1 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Kanamycin                                                                                                                           |  |    |  | 1 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Trimethoprim + sulfonamides                                                                                                         |  |    |  | 1 | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |   |
| Penicillins                                                                                                                         |  |    |  |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |   |
| Ampicillin                                                                                                                          |  |    |  | 1 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   | 1 |

Table Antimicrobial susceptibility testing of *S. Mishmarhaemek* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Mishmarhaemek                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 3   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 2   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 2   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |    |    |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 2   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 1  |    |    |  |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 2   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 1  |    |  |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 2   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 2   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 2   | 0  |   |   |   |   |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 2   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 2   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 2   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 2   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |    |    |  |

Table Antimicrobial susceptibility testing of *S. Montevideo* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| S. Montevideo                                                                                                                       |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gallus gallus                                                                                                                       |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Number of isolates available in the laboratory                                                                                      |  | 3   |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|                                                                                                                                     |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Antimicrobials:                                                                                                                     |  | N   | %R | 2 | 0% | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
| Tetracycline                                                                                                                        |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Amphenicols                                                                                                                         |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Chloramphenicol                                                                                                                     |  | 2   | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |    |
| Cephalosporin                                                                                                                       |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Cefotaxim                                                                                                                           |  | 1   | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |
| Fluoroquinolones                                                                                                                    |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ciprofloxacin                                                                                                                       |  | 3   | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Enrofloxacin                                                                                                                        |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |
| Quinolones                                                                                                                          |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Nalidixic acid                                                                                                                      |  | 2   | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |
| Sulfonamides                                                                                                                        |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Sulfonamide                                                                                                                         |  | 2   | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |
| Aminoglycosides                                                                                                                     |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Streptomycin                                                                                                                        |  | 2   | 0  |   |    |   |   |   |   |    |    |    |    |    | 1  |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Gentamicin                                                                                                                          |  | 2   | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Kanamycin                                                                                                                           |  | 2   | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Trimethoprim + sulfonamides                                                                                                         |  | 2   | 0% |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 1  |    |    |    |    |    |
| Penicillins                                                                                                                         |  |     |    |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Ampicillin                                                                                                                          |  | 2   | 0  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |    |

Table Antimicrobial susceptibility testing of *S. Muenchen* in Poultry meat - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----|--|---|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|--|
| S. Muenchen                                                                                                                         |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Poultry meat                                                                                                                        |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Isolates out of a monitoring program                                                                                                |  | no |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Number of isolates available in the laboratory                                                                                      |  | 1  |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
|                                                                                                                                     |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Antimicrobials:                                                                                                                     |  |    |  | N | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |   |  |
| Tetracycline                                                                                                                        |  |    |  | 1 | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Amphenicols                                                                                                                         |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Chloramphenicol                                                                                                                     |  |    |  | 1 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Cephalosporin                                                                                                                       |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Cefotaxim                                                                                                                           |  |    |  | 1 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |  |
| Fluoroquinolones                                                                                                                    |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Ciprofloxacin                                                                                                                       |  |    |  | 1 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |  |
| Quinolones                                                                                                                          |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Nalidixic acid                                                                                                                      |  |    |  | 1 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Trimethoprim                                                                                                                        |  |    |  | 1 | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |  |
| Sulfonamides                                                                                                                        |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Sulfonamide                                                                                                                         |  |    |  | 1 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |  |
| Aminoglycosides                                                                                                                     |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Streptomycin                                                                                                                        |  |    |  | 1 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Gentamicin                                                                                                                          |  |    |  | 1 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |  |
| Kanamycin                                                                                                                           |  |    |  | 1 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |  |
| Trimethoprim + sulfonamides                                                                                                         |  |    |  | 1 | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Penicillins                                                                                                                         |  |    |  |   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |
| Ampicillin                                                                                                                          |  |    |  | 1 | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |  |

Table Antimicrobial susceptibility testing of *S. Newport* in Turkey - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----|--|---|------|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Newport                                                                                                                          |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Turkeys                                                                                                                             |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | no |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 8  |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  |    |  | N | %R   | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  |    |  | 1 | 100% | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  |    |  | 1 | 100  | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  |    |  | 1 | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Quinolones                                                                                                                          |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  |    |  | 1 | 100  | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim                                                                                                                        |  |    |  | 1 | 100% | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  |    |  | 1 | 100  | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  |    |  | 1 | 0    |   |   |   |   |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  |    |  | 1 | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  |    |  | 1 | 100  | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  |    |  | 1 | 100% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |    |  |   |      |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  |    |  | 1 | 0    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |

Table Antimicrobial susceptibility testing of *S. Newport* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------|-----|-----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|
| S. Newport                                                                                                                          |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Gallus gallus                                                                                                                       |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Isolates out of a monitoring program                                                                                                | yes |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     | 2   |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Number of isolates available in the laboratory                                                                                      |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Antimicrobials:                                                                                                                     | N   | %R  | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |  |
| Tetracycline                                                                                                                        | 2   | 50% | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Amphenicols                                                                                                                         |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Chloramphenicol                                                                                                                     | 2   | 50  | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Fluoroquinolones                                                                                                                    |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Ciprofloxacin                                                                                                                       | 2   | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |  |
| Quinolones                                                                                                                          |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Nalidixic acid                                                                                                                      | 2   | 50  | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |  |  |
| Trimethoprim                                                                                                                        | 2   | 50% | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 1  |    |    |    |    |    |  |  |
| Sulfonamides                                                                                                                        |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Sulfonamide                                                                                                                         | 2   | 50  | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Aminoglycosides                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Streptomycin                                                                                                                        | 2   | 0   |   |   |   |   |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Gentamicin                                                                                                                          | 2   | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Kanamycin                                                                                                                           | 2   | 50  | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| Trimethoprim + sulfonamides                                                                                                         | 2   | 50% | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| 1                                                                                                                                   |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|                                                                                                                                     |     |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |

Table Antimicrobial susceptibility testing of *S. Regent* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Regent                                                                                                                           |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |  |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |

Table Antimicrobial susceptibility testing of *S. Rissen* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|--|---|
| S. Rissen                                                                                                                           |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |  |  |   |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Cephalosporin                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Cefotaxim                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |  |  |  |   |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  | 1 |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |   |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  | 1 |

Table Antimicrobial susceptibility testing of *S. Senftenberg* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
| S. Senftenberg                                                                                                                      |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Gallus gallus                                                                                                                       |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Number of isolates available in the laboratory                                                                                      |  | 7   |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
|                                                                                                                                     |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Antimicrobials:                                                                                                                     |  | N   | %R | 2 | 0% | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |   |
| Tetracycline                                                                                                                        |  |     |    | 2 | 0% | 1 |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Amphenicols                                                                                                                         |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Chloramphenicol                                                                                                                     |  |     |    | 2 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 1  |    |    |    |    |    |    |    |    |    |    |   |
| Cephalosporin                                                                                                                       |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Cefotaxim                                                                                                                           |  |     |    | 1 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |
| Fluoroquinolones                                                                                                                    |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Ciprofloxacin                                                                                                                       |  |     |    | 2 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |
| Quinolones                                                                                                                          |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Nalidixic acid                                                                                                                      |  |     |    | 2 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Trimethoprim                                                                                                                        |  |     |    | 1 | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |
| Sulfonamides                                                                                                                        |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Sulfonamide                                                                                                                         |  |     |    | 2 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |   |
| Aminoglycosides                                                                                                                     |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Streptomycin                                                                                                                        |  |     |    | 2 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Gentamicin                                                                                                                          |  |     |    | 2 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Kanamycin                                                                                                                           |  |     |    | 2 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Trimethoprim + sulfonamides                                                                                                         |  |     |    | 2 | 0% |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |
| Penicillins                                                                                                                         |  |     |    |   |    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| Ampicillin                                                                                                                          |  |     |    | 2 | 0  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1 |

Table Antimicrobial susceptibility testing of *S. Thompson* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Thompson                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |  |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |  |

Table 3.2.5.3 Antimicrobial susceptibility testing of *S. Typhimurium* in animals

| S. Typhimurium                                 |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
|------------------------------------------------|-------------------------|------|-------|---------|---------------|---------|---------|---------------------|---|--------|---|------|---|
|                                                | Cattle (bovine animals) | Pigs | Sheep | Rabbits | Gallus gallus | Turkeys | Pigeons | Pet animals - birds |   |        |   |      |   |
| Isolates out of a monitoring program           | no                      |      | no    | no      | no            |         | no      | no                  |   |        |   |      |   |
| Number of isolates available in the laboratory | 1                       |      | 1     | 1       | 10            |         | 1       | 2                   |   |        |   |      |   |
|                                                |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| Antimicrobials:                                | N                       | %R   | N     | %R      | N             | %R      | N       | %R                  | N | %R     | N | %R   |   |
| Tetracycline                                   | 1                       | 100% |       |         | 1             | 100%    | 1       | 0%                  | 7 | 14,29% | 1 | 0%   | 2 |
| Amphenicols                                    |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| Chloramphenicol                                | 1                       | 0%   | 1     | 100%    | 1             | 100%    | 1       | 0%                  | 7 | 0%     | 1 | 0%   | 2 |
| Cephalosporin                                  |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| Cefotaxim                                      | 1                       | 0%   | 1     | 0%      |               |         | 3       | 0%                  |   |        | 1 | 0%   |   |
| Fluoroquinolones                               |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| Ciprofloxacin                                  | 1                       | 0%   | 1     | 0%      | 1             | 0%      | 7       | 0%                  |   |        | 1 | 0%   | 2 |
| Quinolones                                     |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| Nalidixic acid                                 | 1                       | 0%   | 1     | 0%      | 1             | 0%      | 7       | 14,29%              |   |        | 1 | 0%   | 2 |
| Trimethoprim                                   | 1                       | 0%   |       |         |               |         | 4       | 0%                  |   |        | 1 | 0%   | 2 |
| Sulfonamides                                   |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| Sulfonamide                                    | 1                       | 0%   | 1     | 0%      | 1             | 0%      | 7       | 28,57%              |   |        | 1 | 0%   | 2 |
| Aminoglycosides                                |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| Streptomycin                                   |                         |      | 1     | 100%    | 1             | 0%      | 7       | 14,29%              |   |        | 1 | 0%   | 2 |
| Gentamicin                                     | 1                       | 0%   | 1     | 0%      | 1             | 0%      | 7       | 0%                  |   |        | 1 | 0%   | 2 |
| Kanamycin                                      | 1                       | 0%   | 1     | 0%      | 1             | 0%      | 7       | 0%                  |   |        | 1 | 0%   | 2 |
| Trimethoprim + sulfonamides                    | 1                       | 0%   | 1     | 100%    | 1             | 0%      | 7       | 14,29%              |   |        | 1 | 0%   | 2 |
| Penicillins                                    |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| Ampicillin                                     | 1                       | 0%   | 1     | 100%    | 1             | 0%      | 7       | 0%                  |   |        | 1 | 0%   | 2 |
|                                                |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| Number of multiresistant isolates              |                         |      |       |         |               |         |         |                     |   |        |   |      |   |
| fully sensitive                                |                         |      | 1     | 100%    | 1             | 100%    | 5       | 71,43%              |   |        | 1 | 100% | 2 |
| resistant to 1 antimicrobial                   | 1                       | 100% |       |         |               |         |         |                     |   |        |   |      |   |



Table Antimicrobial susceptibility testing of *S. Typhimurium* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|--------|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Typhimurium                                                                                                                      |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 10  |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R     | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 7   | 14,29% |   |   |   |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 7   | 0      |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 2  | 1  | 1  | 1  |    | 1  |    |    |    |    | 1  |    |    |  |
| Cephalosporin                                                                                                                       |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 3   | 0      |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3  |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 7   | 0      |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 1  |    |    |    |    | 2  | 1  | 2  |  |
| Quinolones                                                                                                                          |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 7   | 14,29  | 1 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 4  |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim                                                                                                                        |  | 4   | 0%     |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 1  |    |    |    | 1  | 1  | 1  |  |
| Sulfonamides                                                                                                                        |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 7   | 28,57  | 1 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  | 1  |    | 1  |    |    |    |    | 2  |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 7   | 14,29  |   | 1 |   |    |    | 2  |    | 2  | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 7   | 0      |   |   |   |    |    |    |    |    |    | 1  | 2  | 3  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 7   | 0      |   |   |   |    |    |    |    |    |    |    |    | 1  | 4  | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 7   | 14,29% | 1 |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 1  | 2  |    | 1  | 1  |    |    |    |    |  |
| Penicillins                                                                                                                         |  |     |        |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 7   | 0      |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    | 3  | 1  | 1  |    |    |    |    |    |    |    |    |  |

Table Antimicrobial susceptibility testing of *S. Typhimurium* in Poultry meat - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----|--------|---|--------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|--|--|
| S. Typhimurium                                                                                                                      |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Poultry meat                                                                                                                        |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Isolates out of a monitoring program                                                                                                |  | no |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Number of isolates available in the laboratory                                                                                      |  | 10 |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
|                                                                                                                                     |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Antimicrobials:                                                                                                                     |  | N  | %R     | 3 | 33,33% | 1 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |   |  |  |
| Tetracycline                                                                                                                        |  | 3  | 33,33% |   |        |   |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Amphenicols                                                                                                                         |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Chloramphenicol                                                                                                                     |  | 3  | 33,33  | 1 |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Cephalosporin                                                                                                                       |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Cefotaxim                                                                                                                           |  | 1  | 0      |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |   |  |  |
| Fluoroquinolones                                                                                                                    |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Ciprofloxacin                                                                                                                       |  | 3  | 0      |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    | 1  | 1  | 1  |   |  |  |
| Quinolones                                                                                                                          |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Nalidixic acid                                                                                                                      |  | 3  | 0      |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 1  |    |    |    |    |    |    |    |    |    |   |  |  |
| Trimethoprim                                                                                                                        |  | 3  | 0%     |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 2  |    |    |    |   |  |  |
| Sulfonamides                                                                                                                        |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Sulfonamide                                                                                                                         |  | 3  | 33,33  | 1 |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    | 1  |    |    |    |    |   |  |  |
| Aminoglycosides                                                                                                                     |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Streptomycin                                                                                                                        |  | 3  | 33,33  |   |        |   |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Gentamicin                                                                                                                          |  | 3  | 0      |   |        |   |    |    |    |    |    |    |    |    |    | 1  | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Kanamycin                                                                                                                           |  | 3  | 0      |   |        |   |    |    |    |    |    |    |    |    |    | 1  | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 3  | 0%     |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  | 1  |    |    |    |    |    |   |  |  |
| Penicillins                                                                                                                         |  |    |        |   |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |
| Ampicillin                                                                                                                          |  | 3  | 33,33  | 1 |        |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2 |  |  |

Table Antimicrobial susceptibility testing of *S. Virchow* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|-----|----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Virchow                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | yes |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 1   |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N   | %R | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |  |
| Quinolones                                                                                                                          |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 1   | 0% |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |     |    |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 1   | 0  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |

Table 3.2.5.1 Antimicrobial susceptibility testing of *Salmonella* spp. in animals

| Salmonella spp.                                |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
|------------------------------------------------|-------------------------|-----|------|----|-------|------|-------|------|---------|------|---------------|--------|---------|------|---------|------|---------------------|------|
|                                                | Cattle (bovine animals) |     | Pigs |    | Sheep |      | Goats |      | Rabbits |      | Gallus gallus |        | Turkeys |      | Pigeons |      | Pet animals - birds |      |
|                                                | no                      | %R  | N    | %R | N     | %R   | N     | %R   | N       | %R   | N             | %R     | N       | %R   | N       | %R   | N                   | %R   |
| Isolates out of a monitoring program           |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| Number of isolates available in the laboratory | 3                       | 0   |      | 3  |       | 2    |       | 1    |         | 189  | 7             |        |         |      |         |      | 2                   |      |
|                                                |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| Antimicrobials:                                | N                       | %R  | N    | %R | N     | %R   | N     | %R   | N       | %R   | N             | %R     | N       | %R   | N       | %R   | N                   | %R   |
| Tetracycline                                   | 2                       | 50% |      |    | 1     | 0%   | 1     | 100% | 1       | 0%   | 109           | 22,02% | 2       | 100% | 1       | 0%   | 2                   | 0%   |
| Amphenicols                                    |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| Chloramphenicol                                | 2                       | 0%  |      |    | 1     | 0%   | 1     | 100% | 1       | 0%   | 109           | 13,76% | 2       | 50%  | 1       | 0%   | 2                   | 0%   |
| Cephalosporin                                  |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| 3rd generation cephalosporins                  |                         |     |      |    |       |      |       |      |         |      |               |        |         |      | 1       | 0%   |                     |      |
| Cefotaxim                                      | 2                       | 0%  |      |    |       |      | 1     | 100% |         |      | 66            | 0%     |         |      |         |      |                     |      |
| Fluoroquinolones                               |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| Ciprofloxacin                                  | 2                       | 0%  |      |    | 1     | 0%   | 1     | 100% | 1       | 0%   | 109           | 0%     | 2       | 0%   | 1       | 0%   | 2                   | 0%   |
| Quinolones                                     |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| Nalidixic acid                                 | 2                       | 0%  |      |    | 1     | 0%   | 1     | 100% | 1       | 0%   | 109           | 21,10% | 2       | 50%  | 1       | 0%   | 2                   | 0%   |
| Trimethoprim                                   | 2                       | 0%  |      |    | 1     | 0%   |       |      | 1       | 0%   | 55            | 3,64%  | 2       | 50%  | 1       | 0%   | 2                   | 0%   |
| Sulfonamides                                   |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| Sulfonamide                                    | 2                       | 0%  |      |    | 1     | 0%   | 1     | 100% | 1       | 0%   | 109           | 5,50%  | 2       | 50%  | 1       | 0%   | 2                   | 0%   |
| Aminoglycosides                                |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| Streptomycin                                   | 2                       | 0%  |      |    |       |      | 1     | 100% | 1       | 0%   | 107           | 18,69% | 2       | 50%  | 1       | 0%   | 2                   | 0%   |
| Gentamicin                                     | 2                       | 0%  |      |    | 1     | 0%   | 1     | 0%   | 1       | 0%   | 109           | 0%     | 2       | 0%   | 1       | 0%   | 2                   | 0%   |
| Kanamycin                                      | 2                       | 0%  |      |    | 1     | 0%   | 1     | 0%   | 1       | 0%   | 108           | 15,74% | 2       | 100% | 1       | 0%   | 2                   | 0%   |
| Trimethoprim + sulfonamides                    | 2                       | 0%  |      |    | 1     | 0%   | 1     | 0%   | 1       | 0%   | 109           | 2,75%  | 2       | 50%  | 1       | 0%   | 2                   | 0%   |
| Penicillins                                    |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| Ampicillin                                     | 2                       | 0%  |      |    | 1     | 0%   | 1     | 100% | 1       | 0%   | 109           | 6,42%  | 2       | 0%   | 1       | 0%   | 2                   | 0%   |
|                                                |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| Number of multiresistant isolates              |                         |     |      |    |       |      |       |      |         |      |               |        |         |      |         |      |                     |      |
| fully sensitive                                | 1                       | 50% |      |    | 1     | 100% |       |      | 1       | 100% | 74            | 67,88% | 0       |      | 1       | 100% | 2                   | 100% |

[illegible]

**Table 3.2.5.5 Antimicrobial susceptibility testing of Salmonella spp. in food**

| Salmonella spp.                                |              |        |                    |    |          |    |             |    |
|------------------------------------------------|--------------|--------|--------------------|----|----------|----|-------------|----|
|                                                | Broiler meat |        | Other poultry meat |    | Pig meat |    | Bovine meat |    |
| Isolates out of a monitoring program           | no           |        |                    |    |          |    |             |    |
| Number of isolates available in the laboratory | 14           |        |                    |    |          |    |             |    |
|                                                |              |        |                    |    |          |    |             |    |
| Antimicrobials:                                | N            | %R     | N                  | %R | N        | %R | N           | %R |
| Tetracycline                                   | 14           | 35,71% |                    |    |          |    |             |    |
| Amphenicols                                    |              |        |                    |    |          |    |             |    |
| Chloramphenicol                                | 14           | 28,57% |                    |    |          |    |             |    |
| Cephalosporin                                  |              |        |                    |    |          |    |             |    |
| Cefotaxim                                      | 10           | 0%     |                    |    |          |    |             |    |
| Fluoroquinolones                               |              |        |                    |    |          |    |             |    |
| Ciprofloxacin                                  | 14           | 0%     |                    |    |          |    |             |    |
| Quinolones                                     |              |        |                    |    |          |    |             |    |
| Nalidixic acid                                 | 14           | 35,71% |                    |    |          |    |             |    |
| Trimethoprim                                   | 12           | 0%     |                    |    |          |    |             |    |
| Sulfonamides                                   |              |        |                    |    |          |    |             |    |
| Sulfonamide                                    | 14           | 7,14%  |                    |    |          |    |             |    |
| Aminoglycosides                                |              |        |                    |    |          |    |             |    |
| Streptomycin                                   | 14           | 35,71% |                    |    |          |    |             |    |
| Gentamicin                                     | 14           | 0%     |                    |    |          |    |             |    |
| Kanamycin                                      | 13           | 15,38% |                    |    |          |    |             |    |
| Trimethoprim + sulfonamides                    | 14           | 0%     |                    |    |          |    |             |    |
| Penicillins                                    |              |        |                    |    |          |    |             |    |
| Ampicillin                                     | 14           | 7,14%  |                    |    |          |    |             |    |
|                                                |              |        |                    |    |          |    |             |    |
| Number of multiresistant isolates              |              |        |                    |    |          |    |             |    |
| fully sensitives                               | 7            | 50%    |                    |    |          |    |             |    |
| resistant to 1 antimicrobial                   | 2            | 14,29% |                    |    |          |    |             |    |
| resistant to 2 antimicrobials                  | 0            | 0%     |                    |    |          |    |             |    |
| resistant to 3 antimicrobials                  | 2            | 14,29% |                    |    |          |    |             |    |
| resistant to 4 antimicrobials                  | 0            | 0%     |                    |    |          |    |             |    |
| resistant to >4 antimicrobials                 | 3            | 21,43% |                    |    |          |    |             |    |

**Table Antimicrobial susceptibility testing of other serovars - qualitative data**

| other serovars                                 |                         |      |               |        |
|------------------------------------------------|-------------------------|------|---------------|--------|
|                                                | Cattle (bovine animals) |      | Gallus gallus |        |
| Isolates out of a monitoring program           | no                      |      | no            |        |
| Number of isolates available in the laboratory | 2                       |      | 141           |        |
|                                                |                         |      |               |        |
| Antimicrobials:                                | N                       | %R   | N             | %R     |
| Tetracycline                                   | 1                       | 0%   | 75            | 30,67% |
| Amphenicols                                    |                         |      |               |        |
| Chloramphenicol                                | 1                       | 0%   | 75            | 20%    |
| Cephalosporin                                  |                         |      |               |        |
| Cefotaxim                                      | 1                       | 0%   | 43            | 0%     |
| Fluoroquinolones                               |                         |      |               |        |
| Ciprofloxacin                                  | 1                       | 0%   | 75            | 0%     |
| Quinolones                                     |                         |      |               |        |
| Nalidixic acid                                 | 1                       | 0%   | 71            | 21,33% |
| Sulfonamides                                   |                         |      |               |        |
| Sulfonamide                                    | 1                       | 0%   | 75            | 5,33%  |
| Aminoglycosides                                |                         |      |               |        |
| Streptomycin                                   | 1                       | 0%   | 74            | 25,66% |
| Gentamicin                                     | 1                       | 0%   | 75            | 0%     |
| Kanamycin                                      | 1                       | 0%   | 74            | 22,97% |
| Trimethoprim + sulfonamides                    | 1                       | 0%   | 75            | 2,67%  |
| Penicillins                                    |                         |      |               |        |
| Ampicillin                                     | 1                       | 0%   | 75            | 4%     |
|                                                |                         |      |               |        |
| Number of multiresistant isolates              |                         |      |               |        |
| fully sensitives                               | 1                       | 100% | 49            | 65,33% |
| resistant to 1 antimicrobial                   |                         |      | 2             | 2,67%  |
| resistant to 2 antimicrobials                  |                         |      | 2             | 2,67%  |
| resistant to 3 antimicrobials                  |                         |      | 7             | 9,33%  |
| resistant to 4 antimicrobials                  |                         |      | 5             | 6,67%  |
| resistant to >4 antimicrobials                 |                         |      | 10            | 13,33% |

Table Antimicrobial susceptibility testing of *S. Gallinarum* in *Gallus gallus* - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----|-----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| S. Gallinarum                                                                                                                       |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gallus gallus                                                                                                                       |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | no |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 4  |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N  | %R  | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 2  | 50% | 1 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 2  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    | 1  |    |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 1  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |  |
| Fluoroquinolones                                                                                                                    |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 2  | 0   |   |   |   |   |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |  |
| Quinolones                                                                                                                          |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 2  | 100 | 2 |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim                                                                                                                        |  | 2  | 0%  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    | 1  |    |    |    |  |
| Sulfonamides                                                                                                                        |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 2  | 50  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 2  | 0   |   |   |   |   |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 2  | 0   |   |   |   |   |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |  |
| Kanamycin                                                                                                                           |  | 2  | 100 | 1 |   |   |   | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  | 2  | 0%  |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    | 1  |    |    |  |
| Penicillins                                                                                                                         |  |    |     |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 2  | 0   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    | 1  |    |  |

**Table 3.2.6 Breakpoints for antibiotic resistance of Salmonella in Animals****Test Method Used**

|                |
|----------------|
| Disc diffusion |
| Agar dilution  |
| Broth dilution |
| E-test         |

**Standards used for testing**

|       |
|-------|
| NCCLS |
| CASFM |

**Subject to quality control**

| Salmonella                         | Standard for breakpoint | Breakpoint concentration (microg/ml) |              |                | Range tested concentration (microg/ml) |         | disk content microg | breakpoint Zone diameter (mm) |              |                 |
|------------------------------------|-------------------------|--------------------------------------|--------------|----------------|----------------------------------------|---------|---------------------|-------------------------------|--------------|-----------------|
|                                    |                         | Susceptible<br><=                    | Intermediate | Resistant<br>> | lowest                                 | highest |                     | Susceptible<br>>=             | Intermediate | Resistant<br><= |
| <b>Tetracycline</b>                |                         |                                      |              |                |                                        |         | 30                  | 19                            | 16,5         | 14              |
| <b>Amphenicols</b>                 |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Chloramphenicol                    |                         |                                      |              |                |                                        |         | 30                  | 18                            | 15           | 12              |
| Florfenicol                        |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| <b>Fluoroquinolones</b>            |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Ciprofloxacin                      |                         |                                      |              |                |                                        |         | 5                   | 15                            | 18           | 15              |
| Enrofloxacin                       |                         |                                      |              |                |                                        |         | 5                   | 22                            | 19,5         | 17              |
| <b>Quinolones</b>                  |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Nalidixic acid                     |                         |                                      |              |                |                                        |         | 30                  | 19                            | 16           | 13              |
| <b>Trimethoprim</b>                |                         |                                      |              |                |                                        |         | 5                   | 16                            | 13           | 10              |
| <b>Sulfonamides</b>                |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Sulfonamide                        |                         |                                      |              |                |                                        |         | 300                 | 17                            | 14,5         | 12              |
| <b>Aminoglycosides</b>             |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Streptomycin                       |                         |                                      |              |                |                                        |         | 10                  | 15                            | 13           | 11              |
| Gentamicin                         |                         |                                      |              |                |                                        |         | 10                  | 15                            | 13,5         | 12              |
| Neomycin                           |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Kanamycin                          |                         |                                      |              |                |                                        |         | 30                  | 18                            | 15,5         | 13              |
| <b>Trimethoprim + sulfonamides</b> |                         |                                      |              |                |                                        |         | 25                  | 16                            | 13           | 10              |
| <b>Cephalosporin</b>               |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Cefotaxim                          |                         |                                      |              |                |                                        |         | 30                  | 23                            | 18,5         | 14              |
| 3rd generation cephalosporins      |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| <b>Penicillins</b>                 |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Ampicillin                         |                         |                                      |              |                |                                        |         | 10                  | 17                            | 15           | 13              |

**Table 3.2.6 Breakpoints for antibiotic resistance of Salmonella in Food****Test Method Used**

|                |
|----------------|
| Disc diffusion |
| Agar dilution  |
| Broth dilution |
| E-test         |

**Standards used for testing**

|       |
|-------|
| NCCLS |
| CASFM |

**Subject to quality control**

| Salmonella                         | Standard for breakpoint | Breakpoint concentration (microg/ml) |              |                | Range tested concentration (microg/ml) |         | disk content microg | breakpoint Zone diameter (mm) |              |                 |
|------------------------------------|-------------------------|--------------------------------------|--------------|----------------|----------------------------------------|---------|---------------------|-------------------------------|--------------|-----------------|
|                                    |                         | Susceptible<br><=                    | Intermediate | Resistant<br>> | lowest                                 | highest |                     | Susceptible<br>>=             | Intermediate | Resistant<br><= |
| <b>Tetracycline</b>                |                         |                                      |              |                |                                        |         | 30                  | 19                            | 16,5         | 14              |
| <b>Amphenicols</b>                 |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Chloramphenicol                    |                         |                                      |              |                |                                        |         | 30                  | 18                            | 15           | 12              |
| Florfenicol                        |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| <b>Fluoroquinolones</b>            |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Ciprofloxacin                      |                         |                                      |              |                |                                        |         | 5                   | 15                            | 18           | 15              |
| Enrofloxacin                       |                         |                                      |              |                |                                        |         | 5                   | 22                            | 19,5         | 17              |
| <b>Quinolones</b>                  |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Nalidixic acid                     |                         |                                      |              |                |                                        |         | 30                  | 19                            | 16           | 13              |
| <b>Trimethoprim</b>                |                         |                                      |              |                |                                        |         | 5                   | 16                            | 13           | 10              |
| <b>Sulfonamides</b>                |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Sulfonamide                        |                         |                                      |              |                |                                        |         | 300                 | 17                            | 14,5         | 12              |
| <b>Aminoglycosides</b>             |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Streptomycin                       |                         |                                      |              |                |                                        |         | 10                  | 15                            | 13           | 11              |
| Gentamicin                         |                         |                                      |              |                |                                        |         | 10                  | 15                            | 13,5         | 12              |
| Neomycin                           |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Kanamycin                          |                         |                                      |              |                |                                        |         | 30                  | 18                            | 15,5         | 13              |
| <b>Trimethoprim + sulfonamides</b> |                         |                                      |              |                |                                        |         | 25                  | 16                            | 13           | 10              |
| <b>Cephalosporin</b>               |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Cefotaxim                          |                         |                                      |              |                |                                        |         | 30                  | 23                            | 18,5         | 14              |
| 3rd generation cephalosporins      |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| <b>Penicillins</b>                 |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Ampicillin                         |                         |                                      |              |                |                                        |         | 10                  | 17                            | 15           | 13              |

**Table 3.2.6 Breakpoints for antibiotic resistance of Salmonella in Feedingstuff****Test Method Used**

|                |
|----------------|
| Disc diffusion |
| Agar dilution  |
| Broth dilution |
| E-test         |

**Standards used for testing**

|       |
|-------|
| NCCLS |
| CASFM |

**Subject to quality control**

| Salmonella                         | Standard for breakpoint | Breakpoint concentration (microg/ml) |              |                | Range tested concentration (microg/ml) |         | disk content microg | breakpoint Zone diameter (mm) |              |                 |
|------------------------------------|-------------------------|--------------------------------------|--------------|----------------|----------------------------------------|---------|---------------------|-------------------------------|--------------|-----------------|
|                                    |                         | Susceptible<br><=                    | Intermediate | Resistant<br>> | lowest                                 | highest |                     | Susceptible<br>>=             | Intermediate | Resistant<br><= |
| <b>Tetracycline</b>                |                         |                                      |              |                |                                        |         | 30                  | 19                            | 16.5         | 14              |
| <b>Amphenicols</b>                 |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Chloramphenicol                    |                         |                                      |              |                |                                        |         | 30                  | 18                            | 15           | 12              |
| Florfenicol                        |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| <b>Fluoroquinolones</b>            |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Ciprofloxacin                      |                         |                                      |              |                |                                        |         | 5                   | 15                            | 18           | 14              |
| Enrofloxacin                       |                         |                                      |              |                |                                        |         | 5                   | 22                            | 19.5         | 17              |
| <b>Quinolones</b>                  |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Nalidixic acid                     |                         |                                      |              |                |                                        |         | 30                  | 19                            | 16           | 13              |
| <b>Trimethoprim</b>                |                         |                                      |              |                |                                        |         | 5                   | 16                            | 13           | 10              |
| <b>Sulfonamides</b>                |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Sulfonamide                        |                         |                                      |              |                |                                        |         | 300                 | 17                            | 14.5         | 12              |
| <b>Aminoglycosides</b>             |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Streptomycin                       |                         |                                      |              |                |                                        |         | 10                  | 15                            | 13           | 11              |
| Gentamicin                         |                         |                                      |              |                |                                        |         | 10                  | 15                            | 13.5         | 12              |
| Neomycin                           |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Kanamycin                          |                         |                                      |              |                |                                        |         | 30                  | 15                            | 15.5         | 13              |
| <b>Trimethoprim + sulfonamides</b> |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| <b>Cephalosporin</b>               |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Cefotaxim                          |                         |                                      |              |                |                                        |         | 30                  | 23                            | 18.5         | 14              |
| 3rd generation cephalosporins      |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| <b>Penicillins</b>                 |                         |                                      |              |                |                                        |         |                     |                               |              |                 |
| Ampicillin                         |                         |                                      |              |                |                                        |         | 10                  | 17                            | 15           | 13              |

## **2.2. CAMPYLOBACTERIOSIS**

### **2.2.1. General evaluation of the national situation**

#### **A. Thermophilic Campylobacter General evaluation**

##### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Thermophilic Campylobacter

AFFECTED SPECIES: Animals, Food

Surveillance system

There is no official National program for animals and food. Sporadic samples are examined, especially from broilers at slaughterhouse level.

Survey Results

Data are presented in Tables 6.1.1 and 6.2 .

## **2.2.2. Campylobacteriosis in humans**

### **A. Thermophilic Campylobacter in humans**

#### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Campylobacteriosis

AFFECTED SPECIES: Human

Results of the investigations in the year 2004

In 2004 , 398 cases (incidence: 3,58 per 100.000 inhabitants) of campylobacteriosis in humans were reported . The predominant causal agent was *C. jejuni* ( 82).

Table 6.3.A Campylobacteriosis in man - species/serotype distribution

| Campylobacter      | Cases | Cases Inc | Autochtone cases | Autochtone Inc | Imported cases | Imported Inc | unknown status |
|--------------------|-------|-----------|------------------|----------------|----------------|--------------|----------------|
|                    | 392   | 3.58      | 0                | 0              | 0              | 0            | 0              |
| C. coli            | 0     | 0         |                  |                |                |              |                |
| C. jejuni          | 82    | 0.75      |                  |                |                |              |                |
| C. upsaliensis     | 0     | 0         |                  |                |                |              |                |
| Campylobacter spp. | 310   | 2.83      |                  |                |                |              |                |

Footnote

Incidence per 100.000 inhabitants

**Table 6.3.B Campylobacteriosis in man - age distribution**

| Age Distribution   | C. coli |   |   | C. jejuni |   |   | Campylobacter spp. |   |   |
|--------------------|---------|---|---|-----------|---|---|--------------------|---|---|
|                    | All     | M | F | All       | M | F | All                | M | F |
| <1 year            |         |   |   |           |   |   | 29                 |   |   |
| 1 to 4 years       |         |   |   |           |   |   | 235                |   |   |
| 5 to 14 years      |         |   |   |           |   |   | 62                 |   |   |
| 15 to 24 years     |         |   |   |           |   |   | 17                 |   |   |
| 25 to 44 years     |         |   |   |           |   |   | 13                 |   |   |
| 45 to 64 years     |         |   |   |           |   |   | 18                 |   |   |
| 65 years and older |         |   |   |           |   |   | 7                  |   |   |
| Age unknown        |         |   |   |           |   |   | 11                 |   |   |
| Total :            | 0       | 0 | 0 | 0         | 0 | 0 | 392                | 0 | 0 |

**Footnote**

Non available information for Gender

Table 6.3.C Campylobacteriosis in man - seasonal distribution

| Month          | C. coli |  | C. jejuni |  | C. upsaliensis |  | Campylobacter spp. |  |
|----------------|---------|--|-----------|--|----------------|--|--------------------|--|
|                | Cases   |  | Cases     |  | Cases          |  | Cases              |  |
| January        |         |  | 3         |  |                |  | 10                 |  |
| February       |         |  | 4         |  |                |  | 7                  |  |
| March          |         |  | 2         |  |                |  | 19                 |  |
| April          |         |  | 7         |  |                |  | 13                 |  |
| May            |         |  | 2         |  |                |  | 10                 |  |
| June           |         |  | 7         |  |                |  | 29                 |  |
| July           |         |  | 13        |  |                |  | 40                 |  |
| August         |         |  | 16        |  |                |  | 61                 |  |
| September      |         |  | 11        |  |                |  | 61                 |  |
| October        |         |  | 8         |  |                |  | 53                 |  |
| November       |         |  | 6         |  |                |  | 47                 |  |
| December       |         |  | 3         |  |                |  | 42                 |  |
| not known      |         |  | 0         |  |                |  | 0                  |  |
| <b>Total :</b> | 0       |  | 82        |  | 0              |  | 392                |  |

### 2.2.3. Campylobacter in foodstuffs

**Table 6.2 Thermophilic Campylobacter spp. in food**

|                    | Source of information | Remarks | Epidemiological unit | Sample weight | Units tested | C. upsaliensis | C. coli | C. lari | C. jejuni | Campylobacter spp. |
|--------------------|-----------------------|---------|----------------------|---------------|--------------|----------------|---------|---------|-----------|--------------------|
| <b>Bovine meat</b> |                       |         |                      |               |              |                |         |         |           |                    |
| <b>fresh</b>       |                       |         |                      |               |              |                |         |         |           |                    |
| - at slaughter     | CVIA                  |         | Animal               | 11            | 0            |                |         |         |           |                    |

## 2.2.4. Campylobacter in animals

**Table 6.1.1 Thermophilic Campylobacter spp. in animals**

|                           | Source of information | Remarks | Epidemiological unit | Units tested | Units positive | C. jejuni | C. coli | C. lari | C. upsaliensis | C. fetus |
|---------------------------|-----------------------|---------|----------------------|--------------|----------------|-----------|---------|---------|----------------|----------|
| Sheep                     | CVIA                  |         | Animal               | 1            | 1              |           |         |         |                | 1        |
| Gallus gallus<br>broilers |                       |         |                      |              |                |           |         |         |                |          |
| - at slaughter            | CVIA                  |         | Animal               | 16           | 0              |           |         |         |                |          |

#### **2.2.5. Antimicrobial resistance in *Campylobacter* isolates**

## **2.3. LISTERIOSIS**

### **2.3.1. General evaluation of the national situation**

#### **A. Listeriosis general evaluation**

##### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Listeriosis

AFFECTED SPECIES: Animals and Food

Surveillance system

There is no specific monitoring program in force for Listeriosis. Routine and targeted sampling performed by the national veterinary authorities and the Hellenic Food Safety Authority ( EFET ) supervised by the Ministry of Rural Development and Food and the Ministry of Development respectively.

Results of the investigations in the year 2004

Data on food refers to *Listeria monocytogenes* are presented in Tables 7.1

### **2.3.2. Listeriosis in humans**

#### **A. Listeriosis in humans**

##### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Listeriosis

AFFECTED SPECIES: Humans

Surveillance system

Mandatory Notification of the disease within week (reporting time period following diagnosis)

Results of the investigations in the year 2004

Three (3) human cases and one death were notified in 2004.

Data on Listeriosis in man are presented in Tables 7.1

Table 7.2.A Listeriosis in man - species/serotype distribution

|          |                  | Cases | Cases Inc |
|----------|------------------|-------|-----------|
| Listeria | Listeria spp.    | 3     | 0.03      |
|          | congenital cases | 3     | 0.03      |
|          | deaths           | 1     | 0.01      |

Footnote

Incidence per 100.000 inhabitants

Table 7.2.B Listeriosis in man - age distribution

| Age Distribution   | L. monocytogenes |   |   | Listeria spp. |   |   |
|--------------------|------------------|---|---|---------------|---|---|
|                    | All              | M | F | All           | M | F |
| <1 year            |                  |   |   | 0             | 0 | 0 |
| 1 to 4 years       |                  |   |   | 0             | 0 | 0 |
| 5 to 14 years      |                  |   |   | 0             | 0 | 0 |
| 15 to 24 years     |                  |   |   | 0             | 0 | 0 |
| 25 to 44 years     |                  |   |   | 0             | 0 | 0 |
| 45 to 64 years     |                  |   |   | 0             | 0 | 0 |
| 65 years and older |                  |   |   | 3             | 2 | 1 |
| Age unknown        |                  |   |   | 0             | 0 | 0 |
| <b>Total :</b>     | 0                | 0 | 0 | 3             | 2 | 1 |

### 2.3.3. Listeria in foodstuffs

**Table 7.1 Listeria monocytogenes in food**

|                              | Source of information | Remarks | Epidemiological unit | Sample weight | Definition used | Units tested | <100 cfu/g | >100 cfu/g | L. monocytogenes |
|------------------------------|-----------------------|---------|----------------------|---------------|-----------------|--------------|------------|------------|------------------|
| <b>Bovine meat</b>           |                       |         |                      |               |                 |              |            |            |                  |
| <b>meat products</b>         |                       |         |                      |               |                 |              |            |            |                  |
| <b>ready-to-eat</b>          |                       |         |                      |               |                 |              |            |            |                  |
| - at processing plant        | RVL                   |         | Sample               | 25 g          |                 | 35           |            |            | 0                |
| - at retail                  | RVL                   |         | Sample               | 25 g          |                 | 82           |            |            | 0                |
| <b>Pig meat</b>              |                       |         |                      |               |                 |              |            |            |                  |
| <b>meat products</b>         |                       |         |                      |               |                 |              |            |            |                  |
| <b>ready-to-eat</b>          |                       |         |                      |               |                 |              |            |            |                  |
| - at processing plant        | RVL                   |         | Sample               | 25 g          |                 | 2            |            |            | 0                |
| - at retail                  | RVL                   |         | Sample               | 25 g          |                 | 11           |            |            | 0                |
| <b>Poultry meat</b>          |                       |         |                      |               |                 |              |            |            |                  |
| <b>meat products</b>         |                       |         |                      |               |                 |              |            |            |                  |
| <b>ready to eat</b>          |                       |         |                      |               |                 |              |            |            |                  |
| - at retail                  | RVL                   |         | Sample               | 25 g          |                 | 126          |            |            | 5                |
| <b>Other meat</b>            |                       |         |                      |               |                 |              |            |            |                  |
| <b>meat products</b>         |                       |         |                      |               |                 |              |            |            |                  |
| <b>ready-to-eat</b>          |                       |         |                      |               |                 |              |            |            |                  |
| - at retail                  | RVL                   |         | Sample               | 25 g          |                 | 197          |            |            | 1                |
| <b>Cheeses</b>               |                       |         |                      |               |                 |              |            |            |                  |
| - at processing plant        | RVL                   |         | Sample               | 25 g          |                 | 50           |            |            | 1                |
| - at retail                  | RVL                   |         | Sample               | 25 g          |                 | 109          |            |            | 1                |
| <b>Dairy products</b>        |                       |         |                      |               |                 |              |            |            |                  |
| <b>other products</b>        |                       |         |                      |               |                 |              |            |            |                  |
| <b>ready-to-eat</b>          |                       |         |                      |               |                 |              |            |            |                  |
| - at processing plant        | RVL                   |         | Sample               | 25 g          |                 | 130          |            |            | 0                |
| - at retail                  | RVL                   |         | Sample               | 25 g          |                 | 699          |            |            | 0                |
| <b>cow milk</b>              |                       |         |                      |               |                 |              |            |            |                  |
| <b>raw</b>                   |                       |         |                      |               |                 |              |            |            |                  |
| for direct human consumption | RVL                   |         | Sample               |               |                 | 16           |            |            | 0                |
| <b>Fishery products</b>      |                       |         |                      |               |                 |              |            |            |                  |
| <b>fish</b>                  |                       |         |                      |               |                 |              |            |            |                  |
| <b>smoked</b>                |                       |         |                      |               |                 |              |            |            |                  |
| - at retail                  | RVL                   |         | Sample               |               |                 | 16           |            |            | 0                |
| <b>Bakery products</b>       | RVL                   |         | Sample               |               |                 | 94           |            |            | 1                |

|       |     |  |        |  |  |     |  |  |   |
|-------|-----|--|--------|--|--|-----|--|--|---|
| cakes | RVL |  | Sample |  |  | 151 |  |  | 0 |
|-------|-----|--|--------|--|--|-----|--|--|---|

## **2.4. VEROCYTOTOXIC ESCHERICHIA COLI**

### **2.4.1. General evaluation of the national situation**

#### **A. Verotoxigenic Escherichia coli infections general evaluation**

##### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Verocytotoxic E.coli

AFFECTED SPECIES: Animals, Food

Surveillance system

There is no official National program in force. Nevertheless some laboratories are using standard techniques for E.coli. detection , isolation and strain identification.

Results of investigations in the year 2004

VT E.coli was detected in animals and food.

Positive samples were detected in various categories of meat, dairy and fish products.

Data analysis are presented in tables 11.1 and 11.2.

## **2.4.2. Verocytotoxic Escherichia coli in humans**

### **A. Verotoxigenic Escherichia coli infections in humans**

#### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Verocytotoxic E.Coli

AFFECTED SPECIES: Human

Surveillance system

Mandatory Notification of the disease within 24 hours (reporting time period following diagnosis)

Results of the investigations in the year 2004

Eighty-four (84) human - laboratory confirmed cases were notified in 2004 ( incidence: 0,77 per 100.000 inhabitants).

**Table 11.3.A Verocytotoxic Escherichia coli infections in man - species/serotype distribution**

| Pathogenic Escherichia coli | Cases | Autochthone Inc | Imported Inc | Imported cases | Autochthone cases | Cases Inc |
|-----------------------------|-------|-----------------|--------------|----------------|-------------------|-----------|
| HUS                         |       |                 |              |                |                   |           |
| - clinical cases            |       |                 |              |                |                   |           |
| - lab. confirmed cases      | 84    |                 |              |                |                   | 0.77      |
| - caused by O157 (VT+)      |       |                 |              |                |                   |           |
| - caused by other VTEC      |       |                 |              |                |                   |           |
| E.coli infect. (except HUS) |       |                 |              |                |                   |           |
| - laboratory confirmed      |       |                 |              |                |                   |           |
| - caused by O157 (VT+)      |       |                 |              |                |                   |           |
| - caused by other VTEC      |       |                 |              |                |                   |           |

**Footnote**

Incidence per 100.000 inhabitants

**Table 11.3.B Verocytotoxic Escherichia coli infections in man - age distribution**

| Age Distribution   | Verotoxigenic E. coli (VTEC) |   |   | VTEC O 157:H7 |   |   | VTEC non-O 157 |   |   |
|--------------------|------------------------------|---|---|---------------|---|---|----------------|---|---|
|                    | All                          | M | F | All           | M | F | All            | M | F |
| <1 year            | 24                           |   |   |               |   |   |                |   |   |
| 1 to 4 years       | 54                           |   |   |               |   |   |                |   |   |
| 5 to 14 years      | 6                            |   |   |               |   |   |                |   |   |
| 15 to 24 years     | 0                            |   |   |               |   |   |                |   |   |
| 25 to 44 years     | 0                            |   |   |               |   |   |                |   |   |
| 45 to 64 years     | 0                            |   |   |               |   |   |                |   |   |
| 65 years and older | 0                            |   |   |               |   |   |                |   |   |
| Age unknown        | 0                            |   |   |               |   |   |                |   |   |
| <b>Total :</b>     | 84                           | 0 | 0 | 0             | 0 | 0 | 0              | 0 | 0 |

### 2.4.3. Pathogenic *Escherichia coli* in foodstuffs

**Table 11.2 Verocytotoxic *Escherichia coli* in food**

|                         | Source of information | Remarks | Epidemiological unit | Sample weight | Units tested | Units positive | <i>Escherichia</i> spp. | VTEC O 157 | VTEC O 157:H7 |
|-------------------------|-----------------------|---------|----------------------|---------------|--------------|----------------|-------------------------|------------|---------------|
| <b>Pig meat</b>         |                       |         |                      |               |              |                |                         |            |               |
| <b>fresh</b>            |                       |         |                      |               |              |                |                         |            |               |
| - at retail             | RVL                   |         | Sample               | 4             | 4            | 0              |                         |            |               |
| <b>meat products</b>    |                       |         |                      |               |              |                |                         |            |               |
| - at retail             | RVL                   |         | Sample               | 73            | 73           | 0              |                         |            |               |
| <b>cow milk</b>         |                       |         |                      |               |              |                |                         |            |               |
| raw                     | RVL                   |         | Sample               |               | 4            | 2              | 2                       |            |               |
| heat-treated            | RVL                   |         | Sample               |               | 1            | 0              |                         |            |               |
| <b>Dairy products</b>   | RVL                   |         | Sample               |               | 359          | 11             | 11                      |            |               |
| <b>Fishery products</b> | RVL                   |         | Sample               |               | 26           | 0              |                         |            |               |

#### Footnote

RVL: Regional Veterinary Laboratories

The following amendments were made :

| Date of modification | Species                              | Column         | Old value | New value |
|----------------------|--------------------------------------|----------------|-----------|-----------|
| 2005-09-27           | Pig meat - fresh - at retail         | Units tested   | 0         | 4         |
|                      | Pig meat - fresh - at retail         | Units positive |           | 0         |
|                      | Pig meat - meat products - at retail | Units tested   | 0         | 73        |
|                      | Pig meat - meat products - at retail | Units positive |           | 0         |

**2.4.4. Pathogenic Escherichia coli in animals****Table 11.1 Verocytotoxic Escherichia coli in animals**

|                                | Source of information | Remarks              | Epidemiological unit | Units tested | Units positive | Escherichia spp. | VTEC O 157:H7 | VTEC O 157 |
|--------------------------------|-----------------------|----------------------|----------------------|--------------|----------------|------------------|---------------|------------|
| <b>Cattle (bovine animals)</b> |                       |                      |                      |              |                |                  |               |            |
| unspecified                    | RVL                   | Routine Microbiology |                      | 2            | 0              |                  |               |            |
| <b>Sheep</b>                   | RVL                   | Routine Microbiology |                      | 33           | 0              |                  |               |            |
| <b>Goats</b>                   | RVL                   | Routine Microbiology |                      | 41           | 0              |                  |               |            |
| <b>Pigs</b>                    | RVL                   | Routine Microbiology |                      | 13           | 0              |                  |               |            |
| <b>Poultry</b>                 | RVL                   | Routine Microbiology |                      | 58           | 11             | 11               |               |            |
| <b>Rabbits</b>                 | RVL                   | Routine Microbiology |                      | 2            | 1              | 1                |               |            |

## **2.5. TUBERCULOSIS**

### **2.5.1. General evaluation of the national situation**

#### **A. Tuberculosis General evaluation**

##### **History of the disease and/or infection in the country**

Susceptible population. Animals (bovines)

687.122 animals raised in 31.097 herds.

Surveillance system

Eradication program for bovine tuberculosis.

Method used

Registration and marking of all bovines.

Tuberculin testing of all bovines over the age of 6 weeks.

Case definition

Infected animal: Animal positive to tuberculin testing.

Infected herd: Herd with one or more animals positive to tuberculin testing

History for Humans

Susceptible population

10.934.097 (National Census, 2001)

Surveillance system

Mandatory reporting and notification policy

Epidemiological surveillance

Methods used

Clinical symptoms, X-ray diagnosis and microbiological confirmation.

Epidemiological history and evaluation.

The prevalent causal agent of Human Tuberculosis in Greece is M.Tuberculosis. A decreasing trend of reported cases has been observed during the year 2000 (93) compared to 1999 (186) and 1998 (990) respectively. In 2001 the number of TB reported cases (576 cases) significantly increased compared to the cases of 2000 (93 cases). No human cases of Bovine Tuberculosis (M. bovis) have been reported to the public Health services during 2004 in Greece. For the year 2004, year with Olympic games in Greece, a significant increase of Human Tuberculosis cases (713 cases due to M. Tuberculosis) was recorded via the national epidemiological surveillance system which was rapid, well - functioned and effective in detecting new cases. Immigration is considered an important risk factor for the TB re-emerge.

##### **National evaluation of the recent situation, the trends and sources of infection**

In humans.

Results of the investigations in the year 2004

Based on reports from the Ministry of Health (Source: Hellenic center of infectious diseases and control) , 713 cases of Human tuberculosis were recorded for the year 2004. Relative information and Data are shown in specified Tables in the data base of the zoonoses electronic system.

Source of human infection

Human contact.

### **Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)**

#### Relevance as zoonotic disease

In general, bovine Tuberculosis infection remains a significant animal health problem in several areas of Greece included the co-finance

Relevance as zoonotic disease  
Human Tuberculosis is a disease of high public concern and significance. The Continuous evaluation of the TB trends in Humans and animals will improve the disease management and intervention at national level. Inter- sector collaboration between Veterinary and Health services should be encouraged in the field of disease epidemiology for each reported TB case in Humans and animals.

d prefectures and the relevance of the disease is considered significant by means of zoonotic and public health impact.

### **Recent actions taken to control the zoonoses**

#### Vaccination policy

Vaccination is not permitted.

#### Measures in case of positive findings

Slaughter of positive animals.

Ban of animal movement from and within the infected herd

Re-examination of the herd and re-establishment of the "tuberculosis free" health status.

### **Additional information**

In Animals (bovines).

Summary results of the investigations for the year 2004

- Number of herds under official control: 31.097
- Number of animals under official control: 687.122
- Number of herds tested by tuberculin test: 11.273
- Number of herds positive: 136
- Number of animals tested by tuberculin test: 247.375
- Number of animals as positive reactors: 2435
- Total number of animals slaughtered: 3983
- Number of positive animals-reactors slaughtered: 2435

## 2.5.2. Tuberculosis in humans

Table 1.2.A Tuberculosis in man - species/serotype distribution

| Mycobacterium                  | Cases | Cases Inc | Autochthone cases | Autochthone Inc | Imported cases | Imported Inc |
|--------------------------------|-------|-----------|-------------------|-----------------|----------------|--------------|
|                                | 713   | 6.52      | 0                 | 0               | 0              | 0            |
| M. bovis                       | 0     | 0         |                   |                 |                |              |
| M. tuberculosis                | 121   | 1.11      |                   |                 |                |              |
| Mycobacterium spp.             | 592   | 5.41      |                   |                 |                |              |
| reactivation of previous cases | 10    | 0.09      |                   |                 |                |              |

**Footnote**

Incidence per 100.000 inhabitants

Table 1.2.B Tuberculosis in man - age distribution

| Age Distribution   | M. bovis |   |   | M. tuberculosis |    |    |
|--------------------|----------|---|---|-----------------|----|----|
|                    | All      | M | F | All             | M  | F  |
| <1 year            |          |   |   | 2               | 1  | 1  |
| 1 to 4 years       |          |   |   | 1               | 1  | 0  |
| 5 to 14 years      |          |   |   | 1               | 1  | 0  |
| 15 to 24 years     |          |   |   | 16              | 11 | 5  |
| 25 to 44 years     |          |   |   | 28              | 22 | 6  |
| 45 to 64 years     |          |   |   | 40              | 33 | 7  |
| 65 years and older |          |   |   | 27              | 16 | 11 |
| Age unknown        |          |   |   | 6               | 3  | 3  |
| <b>Total :</b>     | 0        | 0 | 0 | 121             | 88 | 33 |

### 2.5.3. Mycobacterium in animals

**Table 1.1.3 Tuberculosis in animals**

|       | Source of information | Remarks | Epidemiological unit | Units tested | Units positive | M. bovis | M. tuberculosis |
|-------|-----------------------|---------|----------------------|--------------|----------------|----------|-----------------|
| Goats |                       |         | Animal               | 474847       | 0              |          |                 |
| Pigs  |                       |         | Animal               | 848589       | 0              |          |                 |
| Sheep |                       |         | Animal               | 1527086      | 0              |          |                 |

#### Footnote

Meat inspection at slaughterhouse

**1.1.1 Bovine tuberculosis**

| <b>MANDATORY</b>                                                 | <b>CATTLE</b>              |                                               |                                                |
|------------------------------------------------------------------|----------------------------|-----------------------------------------------|------------------------------------------------|
| Number of herds under official control:                          | 31097                      | Number of animals under official control:     | 687122                                         |
|                                                                  | <b>OTF bovine herds</b>    | <b>OTF bovine herds with status suspended</b> | <b>Bovine herds infected with tuberculosis</b> |
| Status of herds at year end (a):                                 | 21302                      | 1406                                          | 136                                            |
| New cases notified during the year (b):(1)                       |                            | 83                                            |                                                |
|                                                                  | <b>Units tested</b>        | <b>Units suspected</b>                        | <b>Units positive</b>                          |
| Routine tuberculin test (c) - data concerning herds:             | 11273                      |                                               | 136                                            |
| Routine tuberculin test (c) - data concerning animals:           | 247375                     |                                               | 2455                                           |
|                                                                  | <b>Animals slaughtered</b> | <b>Animals suspected</b>                      | <b>Animals positive</b>                        |
| Routine post-mortem examination (d):                             | 3983                       |                                               | 2455                                           |
|                                                                  |                            | <b>Herds suspected</b>                        | <b>Herds confirmed</b>                         |
| Follow up of suspected cases in post-mortem examination (e):     |                            |                                               |                                                |
| Follow-up investigation of suspected cases: trace, contacts (f): |                            |                                               |                                                |
|                                                                  | <b>Animals tested</b>      | <b>Animals suspected</b>                      | <b>Animals positive</b>                        |
| Other routine investigations: exports (g):                       |                            |                                               |                                                |
| Other routine investigations: tests at AI stations (h):          |                            |                                               |                                                |
|                                                                  | <b>All animals</b>         | <b>Positives</b>                              | <b>Contacts</b>                                |
| Animals destroyed (i):                                           |                            |                                               |                                                |
| Animals slaughtered (j):                                         |                            |                                               |                                                |
|                                                                  |                            |                                               |                                                |
| <b>VOLUNTARY</b>                                                 | <b>CATTLE</b>              |                                               |                                                |
|                                                                  | <b>Animals tested</b>      | <b>Animals suspected</b>                      | <b>Animals positive</b>                        |
| Other investigations: imports (k):                               |                            |                                               |                                                |
|                                                                  | <b>Herds tested</b>        | <b>Herds suspected</b>                        | <b>Herds positive</b>                          |
| Other investigations: farms at risk (l):                         |                            |                                               |                                                |
|                                                                  | <b>Samples tested</b>      | <b>M. bovis isolated</b>                      |                                                |
| Bacteriological examination (m):                                 | 4                          | 1                                             |                                                |

(1) : New positive Herds

## **2.6. BRUCELLOSIS**

### **2.6.1. General evaluation of the national situation**

#### **A. Brucellosis General evaluation**

##### **History of the disease and/or infection in the country**

Susceptible population . Bovines

480.155 animals, in 27.224 herds.

Surveillance system

Eradication program for bovine brucellosis.

Method used

Registration and marking of all bovines

Serological tests (Rose Bengal and Complement Fixation Test according the Dir. 64/432 as well as Elisa in milk and serum and Serum Agglutination Test) of all bovines over the age of 12 months

Laboratory examination of reported abortions.

Case definition

Infected animal: Animal positive to serological tests.

Infected herd: Herd with one or more animals positive to serological tests.

Vaccination policy

Vaccination is not permitted.

Epidemiological history and technical evaluation

No significant variations have been recorded on the evolution of bovine Brucellosis compared to the previous year as the period prevalence rate remains almost the same at the level of 4,19% (Year 2003: 4,12%). The estimated incidence rate reduced from 2,17% (2003) to 2,04% (2004). Similarly, the 2004 animal prevalence (1,03%) recorded lower than the previous year 2003 (1,14%). In general, the epidemiological indicators are influenced by the number of herds and animals tested in areas with high infection rate of Bovine Brucellosis.

##### **National evaluation of the recent situation, the trends and sources of infection**

In general, although the epidemiological situation in 2004 has improved compared to 2003, Bovine Brucellosis infection remains a significant animal health problem in several areas of Greece with endemic characteristics, especially in previous infected herds or herds not periodically tested according to the programme requirements. In addition Control and eradication measures for old and new infected herds should be a major task for the veterinary services at regional and local level. In conclusion, further attempts and actions for investigating the epidemiology of the disease, identifying the source of infection and properly implementing the program shall be undertaken in order to meet the eradication targets of Bovine Brucellosis for the next years.

##### **Relevance of the findings in animals, feedingstuffs and foodstuffs to human cases (as a source of infection)**

Relevance as zoonotic disease

In general, bovine Brucellosis infection remains a significant animal health problem in several

areas of Greece included the co-financed prefectures. The implementation of bovine brucellosis eradication program influences the relevance of such a zoonose disease which is high.

Source of human infection- Causal association.

The presence of *B. abortus* in animals has a lesser public health impact in Humans based on the epidemiology and official records from public health services.

### **Recent actions taken to control the zoonoses**

Measures in case of positive findings

Slaughter of positive animals.

Ban of animal movement from and into the infected herd.

Reexamination of the herd and restoration of the "brucellosis free" health status.

### **Additional information**

Susceptible population

480.155 animals, in 27.224 herds.

Surveillance system

Eradication program for bovine brucellosis.

Method used

Registration and marking of all bovines

Serological tests (Rose Bengal and Complement Fixation Test according the Dir. 64/432 as well as Elisa in milk and serum and Serum Agglutination Test) of all bovines over the age of 12 months

Laboratory examination of reported abortions.

Case definition

Infected animal: Animal positive to serological tests.

Infected herd: Herd with one or more animals positive to serological tests.

Vaccination policy

Vaccination is not permitted in the eradication zone

Only for Nomos Thessaloniki in Greece a

RB-51 Vaccination programme is in force

as an additional preventive measure in order to rapidly reduce the Bovine Brucellosis Prevalence, a vaccination policy using the RB-51 vaccine

(*Brucella abortus* strain ) was implemented in the specific high risk area

(Thessaloniki) in order to facilitate the progress of the existing Brucellosis eradication programme in Bovine Herds ( dairy herds ) which is in force and works simultaneously with the vaccination strategy.

The evolution of the 2004 vaccination programme is presented in the table below :

TABLE 1

HERDS UNDER THE PROGRAM 800

ANIMALS UNDER THE PROGRAM 42.445

VACCINATED HERDS 191

ANIMALS IN VACCINATED HERDS 11.078

VACCINATED ANIMALS 10.795

HERD COVERAGE 24%

ANIMAL COVERAGE IN VACCINATED HERDS 97.44 %

TOTAL ANIMAL VACCINATION COVERAGE 25%

## **2.6.2. Brucellosis in humans**

### **A. Brucellosis in humans**

#### **Reporting system in place for the human cases**

Susceptible population

10.934.097 (National Census , 2001)

Surveillance system

Mandatory reporting and notification policy

Epidemiological surveillance

#### **Diagnostic/analytical methods used**

Methods used

Clinical symptoms, serology, culture and microbiological confirmation.

#### **Notification system in place**

Mandatory reporting and notification policy

#### **Results of the investigation**

Results of the investigations in the year 2004

A total of 223 human Brucellosis cases were notified to the competent authorities (incidence per 100.000 persons = 2,04). All the cases were reported as autochone cases. The major infectious agent for humans, which was identified, and sero typed is *B. melitensis* ( 52 cases). The remaining *Brucella* spp cases out of 223 in total (except one case of *Brucella abortus*) , although have not been confirmed and typed, are considered to be *B . melitensis* due to epidemiological outcome and history of the disease presence. Moreover under the same report, 88 cases were recorded as occupational cases.

#### **National evaluation of the recent situation, the trends and sources of infection**

Epidemiological history and evaluation

The continuous implementation of the control and eradication programmes in animals, especially in sheep and goats appears to have a successful impact on decreasing Human Brucellosis cases in Greece over time. In addition the widespread pasteurization, obligatory by law of milk and milk products has scientifically reduced the Human Brucellosis incidence.

For the year 1996 the reported cases were 451, slightly increased compared to those of 1998 (419 cases). For the years 1999 - 2003 the reported human cases were 451, 334, 379 , 327 and 255 respectively.

#### **Relevance as zoonotic disease**

Relevance as zoonotic disease

The relevance and public health significance of *B. melitensis* as the main causative zoonotic agent remains very high in humans.

#### **Additional information**

Source of human infection

Animal contact and consumption of dairy un- pasteurized products are mainly the source of human infection.

**Table 2.3.A Brucellosis in man - species/serotype distribution**

| <b>Brucella</b>    | <b>Cases</b> | <b>Cases Inc</b> | <b>Autochthone cases</b> | <b>Autochthone Inc</b> | <b>Imported cases</b> | <b>Imported Inc</b> |
|--------------------|--------------|------------------|--------------------------|------------------------|-----------------------|---------------------|
|                    | 223          | 2.03             | 223                      | 2.03                   | 0                     | 0                   |
| B. abortus         | 1            | 0.01             | 1                        | 0.01                   |                       |                     |
| B. melitensis      | 52           | 0.47             | 52                       | 0.47                   |                       |                     |
| B. suis            | 0            | 0                | 0                        | 0                      |                       |                     |
| Brucella spp.      | 170          | 1.55             | 170                      | 1.55                   |                       |                     |
| occupational cases | 88           | 0.80             | 88                       | 0.80                   |                       |                     |

**Footnote**

Incidence per 100.000 inhabitants

Table 2.3.B Brucellosis in man - age distribution

| Age Distribution   | B. abortus |          |          | B. melitensis |           |          | Brucella spp. |            |           |
|--------------------|------------|----------|----------|---------------|-----------|----------|---------------|------------|-----------|
|                    | All        | M        | F        | All           | M         | F        | All           | M          | F         |
| <1 year            | 0          | 0        | 0        | 0             | 0         | 0        | 0             | 0          | 0         |
| 1 to 4 years       | 0          | 0        | 0        | 0             | 0         | 0        | 4             | 1          | 3         |
| 5 to 14 years      | 0          | 0        | 0        | 7             | 7         | 0        | 19            | 15         | 4         |
| 15 to 24 years     | 0          | 0        | 0        | 0             | 0         | 0        | 20            | 16         | 4         |
| 25 to 44 years     | 0          | 0        | 0        | 10            | 10        | 0        | 54            | 39         | 14        |
| 45 to 64 years     | 1          | 1        | 0        | 34            | 34        | 0        | 48            | 36         | 12        |
| 65 years and older | 0          | 0        | 0        | 0             | 0         | 0        | 48            | 26         | 22        |
| Age unknown        | 0          | 0        | 0        | 1             | 1         | 0        | 30            | 14         | 6         |
| <b>Total :</b>     | <b>1</b>   | <b>1</b> | <b>0</b> | <b>52</b>     | <b>52</b> | <b>0</b> | <b>223</b>    | <b>147</b> | <b>65</b> |

**Footnote**

11 Brucella spp. cases of unknown gender were reported

### 2.6.3. Brucella in foodstuffs

**Table 2.2 Brucella sp. in food**

|          | Source of information | Remarks             | Epidemiological unit | Units tested | Units positive | B. abortus | B. suis | B. melitensis |
|----------|-----------------------|---------------------|----------------------|--------------|----------------|------------|---------|---------------|
| cow milk |                       |                     |                      |              |                |            |         |               |
| raw      | CVIA                  | Routine Examination | Sample               | 231          | 0              |            |         |               |

## **2.6.4. Brucella in animals**

### **A. Brucella abortus in Bovine Animals**

#### **Vaccination policy**

Eradication programme.

Vaccination policy

Vaccination is not permitted.

#### **Other preventive measures than vaccination in place**

RB-51 Vaccination programme in Thessaloniki prefecture

As an additional preventive measure in order to rapidly reduce the Bovine Brucellosis Prevalence, a vaccination policy using the RB-51 vaccine (Brucella abortus strain ) was implemented in the specific high risk area (Thessaloniki) in order to facilitate the progress of the existing Brucellosis eradication programme in Bovine Herds ( dairy herds ) which is in force and works simultaneously with the vaccination strategy.

The evolution of the 2004 vaccination programme is presented in the table below :

TABLE 1

HERDS UNDER THE PROGRAM 800

ANIMALS UNDER THE PROGRAM 42.445

VACCINATED HERDS 191

ANIMALS IN VACCINATED HERDS 11.078

VACCINATED ANIMALS 10.795

HERD COVERAGE 24%

ANIMAL COVERAGE IN VACCINATED HERDS 97.44 %

TOTAL ANIMAL VACCINATION COVERAGE 25%

#### **Measures in case of the positive findings or single cases**

Measures in case of positive findings

Slaughter of positive animals.

Ban of animal movement from and into the infected herd.

Reexamination of the herd and restoration of the "brucellosis free" health status.

#### **Notification system in place**

Obligatory eradication programme. Continuous implementation and reporting following the legal basis of the approved co- financed programme,

#### **Results of the investigation**

Summary results of the investigations in the year 2004

- Number of herds under official control: 27.224
- Number of animals under official control: 408.155
- Number of herds tested: 10.503
- Number of herds positive: 440
- Number of animals tested: 300.972

- Number of animals tested individually: 140.947
- Number of animals positive: 3.113
- Total number of animals slaughtered: 4.279
- Number of positive animals slaughtered: 3.113

### **National evaluation of the recent situation, the trends and sources of infection**

Bovine Brucellosis Eradication Programme.

#### **Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)**

Relevance as zoonotic disease

In general, bovine Brucellosis infection remains a significant animal health problem in several areas of Greece included the co-financed prefectures. The implementation of bovine brucellosis eradication program influences the relevance of such a zoonose disease which is high.

Source of human infection- Causal association.

The presence of *B. abortus* in animals has a lesser public health impact in Humans based on the epidemiology and official records from public health services.

#### **Additional information**

Susceptible population

480.155 animals, in 27.224 herds.

Surveillance system

Eradication program for bovine brucellosis.

Method used

Registration and marking of all bovines

Serological tests (Rose Bengal and Complement Fixation Test according the Dir. 64/432 as well as Elisa in milk and serum and Serum Agglutination Test) of all bovines over the age of 12 months

Laboratory examination of reported abortions.

Case definition

Infected animal: Animal positive to serological tests.

Infected herd: Herd with one or more animals positive to serological tests.

## **B. *Brucella melitensis* in Sheep**

### **Monitoring system**

#### **Diagnostic/analytical methods used**

Method used

Registration and identification systems applied in animals.

Serological test (test and slaughter policy) in animals raising in the islands

### **Vaccination policy**

Vaccination policy

Mass vaccination of adult and young sheep and goats in accordance with the control program.

### **Other preventive measures than vaccination in place**

An additional preventive measure included in the existing Ovine and Caprine Brucellosis control programme, is in place which is related to the vaccination of free-ranging bovines with REV 1 vaccine in order to reduce the spread of Brucella infection, especially in areas where Bovine, ovine and caprine species are sharing common pastures

### **Measures in case of the positive findings or single cases**

Measures in case of positive findings (according to the eradication program)

Slaughter of positive animals.

Ban of animal movement from and to the infected herd.

Re-examination of the herd and re-establishment of the "brucellosis free" health status.

### **Results of the investigation**

Results of the investigation (monitoring, vaccination, eradication) in the year 2003

Data are shown in table 2.1.2.

### **National evaluation of the recent situation, the trends and sources of infection**

Epidemiological history and Technical evaluation

Ovine and caprine brucellosis due to *B. melitensis* is a significant problem for both public health and animal production in Greece. During the last years a control and eradication program is running by the veterinary services of the Ministry of Rural Development and Food. The aim of the program is to control the incidence and prevalence of the disease in areas of the country where these estimates are reported high, by vaccination of lambs and kids. At the same time, in the remaining parts of the country, where the prevalence of the disease is low an eradication program by test and slaughter policy is implemented.

The 2004 ovine and caprine Brucellosis control and eradication programme was implemented in mainland and islands of Greece. The program was approved and co-financed by the E.U. based on the Decision 2003/849 as amended by the Commission Decision 2004/923 Greece is divided in 54 prefectures called Nomos. For the implementation of brucellosis control and eradication programme the country is divided in two parts in which different policies and measures are applied, the control strategy (mass vaccination of young and adult female small ruminants) and the eradication policy based on testing and slaughter of positive reactors respectively.

More than 1.000.000 animals were vaccinated during 2004 ( 1.007.185). In the islands (eradication zone), except Evia, Lesbos and Leros the 2004 flock and animal prevalence of brucellosis in sheep and goats is 5 % and 0,82% respectively. The island of Lesbos has been excluded from this policy and mass vaccination has been implemented since 2003. In the island of Leros, vaccination policy has started in 2005 and will be continued during 2006. The high *Brucella melitensis* prevalence reported from the eradication zone is mainly due to the significant increase of positive reactors recorded in areas of lasithi ( Island of Crete ) for the year 2004.

Source of human infection

Mainly from animal contact and consumption of dairy products (especially consumption of dairy products prepared by not heated and pasteurized milk or immature types of sheep and goat cheese). In addition, it should be acknowledged the possible risk of obtaining the disease, if various home-made dairy products of unknown origin and hygiene quality are eaten by the

consumers.

**Relevance of the findings in animals to findings in foodstuffs and to human cases (as a source of infection)**

Relevance as zoonotic disease

The relevance of the disease as zoonose is very high.

**Additional information**

Control and Eradication Brucellosis programme in sheep and goats.

Susceptible population

12.883.474 animals, in 126.160 Flocks.

Surveillance system

A control program for ovine and caprine brucellosis is in force in the mainland (includes mass vaccination policy in young and adult sheep and goat population) and a Brucellosis eradication program runs in islands.

Method used

Registration and identification systems applied in animals.

Serological test (test and slaughter policy) in animals raising in the islands.

Animal mass vaccination in the mainland.

Source of human infection

Mainly from animal contact and consumption of dairy products (especially consumption of dairy products prepared by not heated and pasteurized milk or immature types of sheep and goat cheese). In addition, it should be acknowledged the possible risk of obtaining the disease, if various home- made dairy products of unknown origin and hygiene quality are eaten by the consumers.

Case definition

Infected animal: Animal positive to serological tests.

Infected herd: Herd with one or more animals positive .

Vaccination policy

Mass vaccination of adult and young sheep and goats in accordance with the control program.

**Table 2.1.3 Brucellosis in animals**

|      | Source of information | Remarks | Epidemiological unit | Units tested | Units positive | B. melitensis | B. abortus | B. suis |
|------|-----------------------|---------|----------------------|--------------|----------------|---------------|------------|---------|
| Pigs | CVIA                  |         | Animal               | 14           | 0              |               |            |         |

## 2.1.1 Bovine brucellosis

| <b>MANDATORY</b>                                                 | <b>CATTLE</b>           |                                               |                                               |
|------------------------------------------------------------------|-------------------------|-----------------------------------------------|-----------------------------------------------|
| Number of herds under official control:                          | 27224                   | Number of animals under official control:     | 480155                                        |
|                                                                  | <b>OBV bovine herds</b> | <b>OBV bovine herds with status suspended</b> | <b>Bovine herds infected with brucellosis</b> |
| Status of herds at year end (a):                                 | 22294                   | 1374                                          | 277                                           |
| New cases notified during the year (b):                          |                         |                                               | 214                                           |
|                                                                  | <b>Animals tested</b>   | <b>Animals suspected</b>                      | <b>Animals positive</b>                       |
| Notification of clinical cases, including abortions (c):         |                         |                                               |                                               |
|                                                                  | <b>Units tested</b>     | <b>Units suspected</b>                        | <b>Units positive</b>                         |
| Routine testing (d1) - data concerning herds:                    | 10503                   |                                               | 440                                           |
| Routine testing (d2) - number of animals tested:                 | 300972                  |                                               | 3113                                          |
| Routine testing (d3) - number of animals tested individually:    | 138213                  |                                               | 3113                                          |
|                                                                  |                         | <b>Herds suspected</b>                        | <b>Herds confirmed</b>                        |
| Follow-up investigation of suspected cases: trace, contacts (e): |                         |                                               |                                               |
|                                                                  | <b>Animals tested</b>   | <b>Animals suspected</b>                      | <b>Animals positive</b>                       |
| Other routine investigations: exports (f):                       |                         |                                               |                                               |
| Other routine investigations: tests at AI stations (g):          |                         |                                               |                                               |
|                                                                  | <b>All animals</b>      | <b>Positives</b>                              | <b>Contacts</b>                               |
| Animals destroyed (h):                                           |                         |                                               |                                               |
| Animals slaughtered (i):                                         | 4279                    | 3113                                          |                                               |
|                                                                  |                         |                                               |                                               |
| <b>VOLUNTARY</b>                                                 | <b>CATTLE</b>           |                                               |                                               |
|                                                                  | <b>Animals tested</b>   | <b>Animals suspected</b>                      | <b>Animals positive</b>                       |
| Other investigations: imports (k):                               |                         |                                               |                                               |
|                                                                  | <b>Herds tested</b>     | <b>Herds suspected</b>                        | <b>Herds positive</b>                         |
| Other investigations: farms at risk (l):                         |                         |                                               |                                               |
|                                                                  | <b>Samples tested</b>   | <b>Brucella isolated</b>                      |                                               |
| Bacteriological examination (m):(1)                              | 173                     | 60                                            |                                               |

(1) : The number 60 refers to positive samples, not Brucella isolation

## 2.1.2 Ovine and caprine brucellosis

| <b>MANDATORY</b>                                                 | <b>SHEEP AND GOATS</b>                |                                                             |                                                                 |
|------------------------------------------------------------------|---------------------------------------|-------------------------------------------------------------|-----------------------------------------------------------------|
| Number of holdings under official control:                       | 126160                                | Number of animals under official control:                   | 12883474                                                        |
|                                                                  | <b>OBF ovine and caprine holdings</b> | <b>OBF ovine and caprine holdings with status suspended</b> | <b>OBF ovine and caprine holdings infected with brucellosis</b> |
| Status of herds at year end (a):                                 | 5232                                  | 2244                                                        | 40                                                              |
| New cases notified during the year (b):                          |                                       |                                                             |                                                                 |
|                                                                  | <b>Animals tested</b>                 | <b>Animals suspected</b>                                    | <b>Animals positive</b>                                         |
| Notification of clinical cases, including abortions (c):         |                                       |                                                             |                                                                 |
|                                                                  | <b>Units tested</b>                   | <b>Units suspected</b>                                      | <b>Units positive</b>                                           |
| Routine testing (d) - data concerning holdings:                  | 657                                   |                                                             | 37                                                              |
| Routine testing (d) - data concerning animals:                   | 38575                                 |                                                             | 362                                                             |
|                                                                  |                                       | <b>Holdings suspected</b>                                   | <b>Holdings confirmed</b>                                       |
| Follow-up investigation of suspected cases: trace, contacts (e): |                                       |                                                             |                                                                 |
|                                                                  | <b>Animals tested</b>                 | <b>Animals suspected</b>                                    | <b>Animals positive</b>                                         |
| Other routine investigations: exports (f):                       |                                       |                                                             |                                                                 |
|                                                                  | <b>All animals</b>                    | <b>Positives</b>                                            | <b>Contacts</b>                                                 |
| Animals destroyed (g):                                           |                                       |                                                             |                                                                 |
| Animals slaughtered (h):                                         | 1812                                  | 1812                                                        |                                                                 |
|                                                                  |                                       |                                                             |                                                                 |
| <b>VOLUNTARY</b>                                                 | <b>SHEEP AND GOATS</b>                |                                                             |                                                                 |
|                                                                  | <b>Animals tested</b>                 | <b>Animals suspected</b>                                    | <b>Animals positive</b>                                         |
| Other investigations: imports (i):                               |                                       |                                                             |                                                                 |
|                                                                  | <b>Holdings tested</b>                | <b>Holdings suspected</b>                                   | <b>Holdings positive</b>                                        |
| Other investigations: farms at risk (j):                         |                                       |                                                             |                                                                 |
|                                                                  | <b>Samples tested</b>                 | <b>Brucella isolated</b>                                    |                                                                 |
| Bacteriological examination (k):                                 |                                       |                                                             |                                                                 |

## Footnote

Two programmes are in place in Greece. 1. Control Programme in mainland ( vaccination performance / 1.200.000 sheep and goats were vaccinated during 2004 and 2. Eradication programme in islands ( test and slaughter policy / Data on this table

## **2.7. YERSINIOSIS**

### **2.7.1. General evaluation of the national situation**

#### **A. *Yersinia enterocolitica* general evaluation**

##### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Yersiniosis

AFFECTED SPECIES: Animals and Food

No Data were available for animal and Food respectively.

## **2.7.2. Yersiniosis in humans**

### **A. Yersiniosis in humans**

#### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Yersiniosis

AFFECTED SPECIES: Animals, Human, Food

No Data were available for animal.

Data on samples tested for *Yersinia enterocolitica* in food and humans are presented in Table 8.2 and 8.3 respectively. Thirty nine (39) cases of Human Yersiniosis were reported and among them 37 out of 39 were as *Y. enterocolitica* cases.

Results of the investigations in the year 2004

Humans:

*Y. enterocolitica* : 37 cases ( incidence:0,36 per 100.000 inhabitants)

*Yersinia* spp : 2 cases ( 0,34 per 100.000 inhabitants ).

**Table 8.3.A Yersiniosis in man - species/serotype distribution**

| Yersinia              | Cases | Cases Inc | Autochtone cases | Autochtone Inc | Imported cases | Imported Inc |
|-----------------------|-------|-----------|------------------|----------------|----------------|--------------|
|                       | 39    | 0.358     | 0                | 0              | 0              | 0            |
| Y. enterocolitica     | 37    | 0.34      |                  |                |                |              |
| Yersinia spp.         | 2     | 0.018     |                  |                |                |              |
| Y. enterocolitica O:3 |       |           |                  |                |                |              |
| Y. enterocolitica O:9 |       |           |                  |                |                |              |

**Footnote**

Incidence per 100.000 inhabitants

**Table 8.3.B Yersiniosis in man - age distribution**

| Age Distribution   | Y. enterocolitica |          |          | Yersinia spp. |          |          |
|--------------------|-------------------|----------|----------|---------------|----------|----------|
|                    | All               | M        | F        | All           | M        | F        |
| <1 year            | 3                 |          |          | 3             |          |          |
| 1 to 4 years       | 26                |          |          | 27            |          |          |
| 5 to 14 years      | 7                 |          |          | 7             |          |          |
| 15 to 24 years     | 1                 |          |          | 1             |          |          |
| 25 to 44 years     | 0                 |          |          | 0             |          |          |
| 45 to 64 years     | 0                 |          |          | 0             |          |          |
| 65 years and older | 0                 |          |          | 1             |          |          |
| Age unknown        | 0                 |          |          | 0             |          |          |
| <b>Total :</b>     | <b>37</b>         | <b>0</b> | <b>0</b> | <b>39</b>     | <b>0</b> | <b>0</b> |

**Table 8.3.C Yersiniosis in man - seasonal distribution**

| Month          | Y. enterocolitica |  | Yersinia spp. |  |
|----------------|-------------------|--|---------------|--|
|                | Cases             |  | Cases         |  |
| January        | 2                 |  | 2             |  |
| February       | 0                 |  | 0             |  |
| March          | 4                 |  | 6             |  |
| April          | 1                 |  | 1             |  |
| May            | 1                 |  | 1             |  |
| June           | 8                 |  | 8             |  |
| July           | 2                 |  | 2             |  |
| August         | 0                 |  | 0             |  |
| September      | 3                 |  | 3             |  |
| October        | 5                 |  | 5             |  |
| November       | 4                 |  | 4             |  |
| December       | 7                 |  | 7             |  |
| not known      | 0                 |  | 0             |  |
| <b>Total :</b> | <b>37</b>         |  | <b>39</b>     |  |

### **2.7.3. Yersinia in foodstuffs**

### **2.7.4. Yersinia in animals**

## **2.8. TRICHINELLOSIS**

### **2.8.1. General evaluation of the national situation**

#### **A. Trichinellosis General evaluation**

##### **History of the disease and/or infection in the country**

DISEASE/AGENT: Trichinellosis

AFFECTED SPECIES: Animals

Susceptible population

All swine, eligible for slaughter.

Surveillance system

Compulsory examination for detection of Trichinellosis at Slaughterhouse level.

Method used

Two main methods for the diagnosis of *Trichinella* spp in fresh pork meat are used. The first comprises the digestion in artificial gastric juice of muscle tissues from *Trichinella* prediction sites, followed by the microscopic examination of the deposit for the larvae. The second is the examination of tissues from diaphragm in the trichinoscope.

##### **Additional information**

Epidemiological history

No positive findings were reported among the samples, which were examined in slaughterhouses.

Results of the investigations in the year 2004

Data findings are presented in Table 4.1

## **2.8.2. Trichinellosis in humans**

### **A. Trichinellosis in humans**

#### **Reporting system in place for the human cases**

Trichinellosis is notifiable disease within week following the diagnosis.

#### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Trichinellosis

AFFECTED SPECIES: Human

Results of the investigations in the year 2004

No cases of human trichinellosis were reported during the year 2004

Table 4.2.A Trichinellosis in man - species/serotype distribution

| Trichinella      | Cases | Cases Inc | Autochtone cases | Autochtone Inc | Imported cases | Imported Inc |
|------------------|-------|-----------|------------------|----------------|----------------|--------------|
|                  | 0     | 0         | 0                | 0              | 0              | 0            |
| Trichinella spp. | 0     | 0         |                  |                |                |              |

**Table 4.2.B Trichinellosis in man - age distribution**

| Age Distribution   | Trichinella spp. |   |   |
|--------------------|------------------|---|---|
|                    | All              | M | F |
| <1 year            | 0                | 0 | 0 |
| 1 to 4 years       | 0                | 0 | 0 |
| 5 to 14 years      | 0                | 0 | 0 |
| 15 to 24 years     | 0                | 0 | 0 |
| 25 to 44 years     | 0                | 0 | 0 |
| 45 to 64 years     | 0                | 0 | 0 |
| 65 years and older | 0                | 0 | 0 |
| Age unknown        | 0                | 0 | 0 |
| <b>Total :</b>     | 0                | 0 | 0 |

### 2.8.3. Trichinella in animals

**Table 4.1 Trichinella in animals**

|                 | Source of information | Remarks | Epidemiological unit | Animals tested | Animals positive |
|-----------------|-----------------------|---------|----------------------|----------------|------------------|
| <b>Pigs</b>     |                       |         | Animal               | 377242         | 0                |
| <b>Wildlife</b> |                       |         |                      |                |                  |
| wild boars      |                       |         | Animal               | 32             | 0                |
| <b>Poultry</b>  |                       |         | Animal               | 51             | 0                |

#### Footnote

Meat inspection at slaughterhouse  
Poultry: Game birds

## **2.9. ECHINOCOCCOSIS**

### **2.9.1. General evaluation of the national situation**

#### **A. Echinococcus spp general evaluation**

##### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Echinococcosis

AFFECTED SPECIES: Animals

Susceptible population

All animals eligible for slaughter at country level.

Surveillance system

Inspection of all carcasses at the slaughterhouses.

Preventive treatment of all owned dogs with antiparasitic tablets.

Method used

For farm animals , meat inspection of carcasses at slaughterhouses. For dogs the arecolin test applied and for humans X-ray, echo and serological investigation performed.

Epidemiological history

The infection among the owned dogs has been almost disappeared due to systematic preventive treatment of animals with antiparasitic medicine. The infection in stray dogs is unknown. The overall infection in farm animals is decreasing over time.

Results of the investigations in the year 2004

Data presented in table 9.1

Source of human infection

Mainly through the consumption of contaminated food (i.e vegetables).

##### **Additional information**

The disease is notifiable in animals since 1980.

## **2.9.2. Echinococcosis in humans**

### **A. Echinococcus spp in humans**

#### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Echinococcosis

AFFECTED SPECIES: Human

Surveillance system

Clinical cases referred to the competent authority.

Mandatory Notification of the disease within week (reporting time period following diagnosis).

Method used

X-ray, echo and serological tests.

Epidemiological history

A slight decrease in the number of clinical cases for the year 1999 comparing to the year 1998 was noticed. 99 autochthon cases and 6 imported were notified for the year 1999. For the years 2000 ,2001, 2002 and 2003 , 20, 37 , 5 and 17 human cases were reported respectively.

Results of the investigations in the year 2004

Seven teen (17) human cases were reported to the competent authority of the Ministry of Health for the year 2004 ( Table 9.2).

Source of human infection

Mainly consumption of infected ( with parasite eggs ) food (i.e vegetables) and animal contact in conjunction with poor sanitary and hygiene conditions in rural areas

Table 9.2.A Echinococcosis in man - species/serotype distribution

| Echinococcus      | Cases | Cases Inc | Autochtone cases | Autochtone Inc | Imported cases | Imported Inc |
|-------------------|-------|-----------|------------------|----------------|----------------|--------------|
| E. granulosus     | 26    | 0.24      | 0                | 0              | 0              | 0            |
| E. multilocularis |       |           |                  |                |                |              |
| Echinococcus spp. | 26    | 0.24      |                  |                |                |              |

Footnote

Incidence per 100.000 inhabitants

**Table 9.2.B Echinococcosis in man - age distribution**

| Age Distribution   | E. granulosus |   |   | E. multilocularis |   |   | Echinococcus spp. |    |    |
|--------------------|---------------|---|---|-------------------|---|---|-------------------|----|----|
|                    | All           | M | F | All               | M | F | All               | M  | F  |
| <1 year            |               |   |   |                   |   |   | 1                 | 0  | 1  |
| 1 to 4 years       |               |   |   |                   |   |   | 1                 | 0  | 1  |
| 5 to 14 years      |               |   |   |                   |   |   | 2                 | 2  | 0  |
| 15 to 24 years     |               |   |   |                   |   |   | 1                 | 0  | 1  |
| 25 to 44 years     |               |   |   |                   |   |   | 7                 | 1  | 6  |
| 45 to 64 years     |               |   |   |                   |   |   | 5                 | 4  | 1  |
| 65 years and older |               |   |   |                   |   |   | 9                 | 5  | 4  |
| Age unknown        |               |   |   |                   |   |   | 0                 | 0  | 0  |
| <b>Total :</b>     | 0             | 0 | 0 | 0                 | 0 | 0 | 26                | 12 | 14 |

### 2.9.3. Echinococcus in animals

**Table 9.1 Echinococcus sp. in animals**

|                                | Source of information | Remarks | Epidemiological unit | Units tested | Echinococcus spp. | E. granulosus | E. multilocularis |
|--------------------------------|-----------------------|---------|----------------------|--------------|-------------------|---------------|-------------------|
| <b>Cattle (bovine animals)</b> | slaughterhouse        |         | Animal               | 115417       | 1368              |               |                   |
| <b>Sheep</b>                   | slaughterhouse        |         | Animal               | 1527086      | 28916             |               |                   |
| <b>Goats</b>                   | slaughterhouse        |         | Animal               | 474847       | 1469              |               |                   |
| <b>Pigs</b>                    | slaughterhouse        |         | Animal               | 848589       | 0                 |               |                   |

#### Footnote

Meat inspection

Echinococcus spp refer to Ech.cysts found in carcasses

The following amendments were made :

| Date of modification | Species                 | Column               | Old value | New value |
|----------------------|-------------------------|----------------------|-----------|-----------|
| 2005-09-25           | Cattle (bovine animals) | Epidemiological unit |           | Animal    |
|                      | Sheep                   | Epidemiological unit |           | Animal    |
|                      | Goats                   | Epidemiological unit |           | Animal    |
|                      | Pigs                    | Epidemiological unit |           | Animal    |

## **2.10. TOXOPLASMOSIS**

### **2.10.1. General evaluation of the national situation**

#### **A. Toxoplasmosis general evaluation**

##### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Toxoplasmosis

AFFECTED SPECIES: Animals

Toxoplasma gondii is detected in Sheep and Goats tested under Surveys ( Table 10.1)

## **2.10.2. Toxoplasmosis in humans**

### **A. Toxoplasmosis in humans**

#### **Notification system in place**

Only the congenital toxoplasmosis in humans is notifiable within week following the diagnosis

#### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Toxoplasmosis

AFFECTED SPECIES: Animals, Human

*Toxoplasma gondii* is detected in Sheep and Goats in the framework of routine and sporadic Surveys with laboratory examinations ( Table 10.1). Two human cases of toxoplasmosis were reported in 2004.

Table 10.2.A Toxoplasmosis in man - species/serotype distribution

|            |                  | Cases | Cases Inc |
|------------|------------------|-------|-----------|
| Toxoplasma |                  | 2     | 0.02      |
|            | Toxoplasma spp.  | 2     | 0.02      |
|            | congenital cases |       |           |

Footnote

Incidence per 100.000 inhabitants

**Table 10.2.B Toxoplasmosis in man - age distribution**

| Age Distribution   | Toxoplasma spp. |          |          |
|--------------------|-----------------|----------|----------|
|                    | All             | M        | F        |
| <1 year            | 2               | 1        | 1        |
| 1 to 4 years       | 0               | 0        | 0        |
| 5 to 14 years      | 0               | 0        | 0        |
| 15 to 24 years     | 0               | 0        | 0        |
| 25 to 44 years     | 0               | 0        | 0        |
| 45 to 64 years     | 0               | 0        | 0        |
| 65 years and older | 0               | 0        | 0        |
| Age unknown        | 0               | 0        | 0        |
| <b>Total :</b>     | <b>2</b>        | <b>1</b> | <b>1</b> |

### 2.10.3. Toxoplasma in animals

**Table 10.1 Toxoplasma gondii in animals**

|       | Source of information | Remarks             | Epidemiological unit | Units tested | Units positive |
|-------|-----------------------|---------------------|----------------------|--------------|----------------|
| Sheep | CVIA                  | Routine Diagnostics | Animal               | 458          | 324            |
| Goats | CVIA                  | Routine Diagnostics | Animal               | 272          | 182            |

## **2.11. RABIES**

### **2.11.1. General evaluation of the national situation**

#### **A. Rabies General evaluation**

##### **National evaluation of the recent situation, the trends and sources of infection**

DISEASE/AGENT: Rabies

AFFECTED SPECIES: Animals

Surveillance system

No special program in force.

Vaccination policy

Vaccination of all owned dogs is implemented in the country.

Epidemiological history

No cases of human or animal rabies were reported. Greece is a Rabies- free country

Data on animals tested for Rabies are presented in Table 5.1

## 2.11.2. Lyssavirus (rabies) in animals

**Table 5.1 Rabies in animals**

|                    | Source of information | Remarks                       | Animals tested | Animals positive |
|--------------------|-----------------------|-------------------------------|----------------|------------------|
| <b>Pet animals</b> |                       |                               |                |                  |
| dogs               | CVIA                  | IF and Serology (FAVN method) | 1052           | 0                |
| cats               | CVIA                  | IF                            | 2              | 0                |

### **3. INFORMATION ON SPECIFIC INDICATORS OF ANTIMICROBIAL RESISTANCE**

### **3.1. E. COLI INDICATORS**

#### **3.1.1. General evaluation of the national situation**

#### **3.1.2. Antimicrobial resistance in *Escherichia coli* isolates**

**Table 13.1 Antimicrobial susceptibility testing of E.coli in animals**

|                                                | E.coli                  |        |      |    |       |     |               |        |         |    |                 |      |
|------------------------------------------------|-------------------------|--------|------|----|-------|-----|---------------|--------|---------|----|-----------------|------|
|                                                | Cattle (bovine animals) |        | Pigs |    | Goats |     | Gallus gallus |        | Turkeys |    | Sheep and goats |      |
| Isolates out of a monitoring program           | no                      |        |      |    | no    |     | no            |        |         |    | no              |      |
| Number of isolates available in the laboratory | 3                       |        |      |    | 2     |     | 52            |        |         |    | 26              |      |
|                                                |                         |        |      |    |       |     |               |        |         |    |                 |      |
| Antimicrobials:                                | N                       | %R     | N    | %R | N     | %R  | N             | %R     | N       | %R | N               | %R   |
| Tetracycline                                   | 3                       | 33,33% |      |    |       |     | 51            | 90%    |         |    | 26              | 92%  |
| Amphenicols                                    |                         |        |      |    |       |     |               |        |         |    |                 |      |
| Chloramphenicol                                | 3                       | 33,33% |      |    | 2     | 0%  | 52            | 17,3%  |         |    |                 |      |
| Cephalosporin                                  |                         |        |      |    |       |     |               |        |         |    |                 |      |
| 3rd generation cephalosporins                  | 1                       | 0%     |      |    |       |     | 19            | 26,3%  |         |    | 26              | 58%  |
| Fluoroquinolones                               |                         |        |      |    |       |     |               |        |         |    |                 |      |
| Ciprofloxacin                                  | 3                       | 0%     |      |    | 2     | 0%  | 52            | 11,5%  |         |    |                 |      |
| Enrofloxacin                                   | 1                       | 0%     |      |    |       |     | 12            | 25%    |         |    | 26              | 42%  |
| Quinolones                                     |                         |        |      |    |       |     |               |        |         |    |                 |      |
| Nalidixic acid                                 | 3                       | 0%     |      |    | 2     | 0%  | 52            | 63,5%  |         |    |                 |      |
| Trimethoprim                                   | 3                       | 66,66% |      |    | 2     | 0%  | 46            | 56,5%  |         |    |                 |      |
| Sulfonamides                                   |                         |        |      |    |       |     |               |        |         |    |                 |      |
| Sulfonamide                                    | 3                       | 66,66% |      |    | 2     | 50% | 52            | 71,1%  |         |    |                 |      |
| Aminoglycosides                                |                         |        |      |    |       |     |               |        |         |    |                 |      |
| Streptomycin                                   | 3                       | 33,33% |      |    | 2     | 50% | 52            | 59,6%  |         |    |                 |      |
| Gentamicin                                     | 3                       | 0%     |      |    | 2     | 0%  | 52            | 1,9%   |         |    | 26              | 54%  |
| Neomycin                                       |                         |        |      |    |       |     |               |        |         |    | 26              | 100% |
| Kanamycin                                      | 3                       | 33,33% |      |    | 2     | 0%  | 49            | 38,7%  |         |    |                 |      |
| Trimethoprim + sulfonamides                    |                         |        |      |    |       |     |               |        |         |    |                 |      |
| Trimethoprim + Sulfonamide                     | 3                       | 66,66% |      |    | 2     | 0%  | 52            | 55,7%  |         |    | 26              | 62%  |
| Penicillins                                    |                         |        |      |    |       |     |               |        |         |    |                 |      |
| Ampicillin                                     | 3                       | 33,33% |      |    | 1     | 0%  | 51            | 56,99% |         |    | 26              | 100% |
|                                                |                         |        |      |    |       |     |               |        |         |    |                 |      |
| Number of multiresistant isolates              |                         |        |      |    |       |     |               |        |         |    |                 |      |
| fully sensitives                               | 1                       | 33,33% |      |    | 1     | 50% |               |        |         |    |                 |      |
| resistant to 1 antimicrobial                   |                         |        |      |    |       |     | 9             | 17,3%  |         |    |                 |      |
| resistant to 2 antimicrobials                  |                         |        |      |    | 1     | 50% | 4             | 7,69%  |         |    |                 |      |
| resistant to 3 antimicrobials                  | 1                       | 33,3%  |      |    |       |     | 3             | 5,76%  |         |    | 3               | 12%  |
| resistant to 4 antimicrobials                  |                         |        |      |    |       |     | 9             | 17,3%  |         |    | 5               | 19%  |
| resistant to >4 antimicrobials                 | 1                       | 33,3%  |      |    |       |     | 27            | 51,92% |         |    | 18              | 69%  |

Table Antimicrobial susceptibility testing of E.coli in all animals - quantitative data [Diffusion method]

| Percentage of resistant isolates (R%) and percentage of isolates with the concentration (µl/ml) or zone (mm) of inhibition equal to |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|----|--------|----|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| E.coli                                                                                                                              |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| all animals                                                                                                                         |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Isolates out of a monitoring program                                                                                                |  | no |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Number of isolates available in the laboratory                                                                                      |  | 60 |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|                                                                                                                                     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Antimicrobials:                                                                                                                     |  | N  | %R     | 6  | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
| Tetracycline                                                                                                                        |  | 50 | 8%     | 43 |   |   |   |    |    |    |    |    |    |    | 1  |    | 2  | 1  |    |    |    | 1  |    |    |    |    |    |    |    |    |    |    |    |  |
| Amphenicols                                                                                                                         |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Chloramphenicol                                                                                                                     |  | 56 | 16,07  | 8  |   |   | 1 |    |    |    |    |    | 1  |    |    |    | 2  | 5  | 4  | 5  | 11 | 10 | 6  | 2  | 1  |    |    |    |    |    |    |    |    |  |
| Cephalosporin                                                                                                                       |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Cefotaxim                                                                                                                           |  | 21 | 19.04  | 1  |   |   |   |    | 2  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2  | 1  | 2  | 5  | 3  | 2  | 2  |    |  |
| Fluoroquinolones                                                                                                                    |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ciprofloxacin                                                                                                                       |  | 57 | 12,28  | 2  | 1 |   |   | 1  |    |    |    | 3  |    |    |    |    | 1  | 1  |    | 5  | 3  | 4  | 3  | 1  | 3  | 2  | 1  | 11 | 5  | 4  | 3  | 1  | 2  |  |
| Enrofloxacin                                                                                                                        |  | 11 | 36,36  | 1  |   |   | 1 | 1  |    |    |    | 1  |    |    |    | 1  | 1  |    |    |    | 1  |    |    | 1  |    | 1  | 1  | 1  |    |    |    |    |    |  |
| Quinolones                                                                                                                          |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Nalidixic acid                                                                                                                      |  | 60 | 56,66  | 25 | 2 | 1 | 2 | 2  | 1  |    | 1  |    |    |    |    |    |    |    |    | 1  | 5  | 4  | 11 | 2  | 2  |    | 1  |    |    |    |    |    |    |  |
| Trimethoprim                                                                                                                        |  | 54 | 53,70% | 29 |   |   |   |    |    |    | 1  |    |    |    |    |    |    |    |    | 1  | 1  | 1  | 6  | 2  | 6  | 4  | 2  | 1  |    |    |    |    |    |  |
| Sulfonamides                                                                                                                        |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Sulfonamide                                                                                                                         |  | 60 | 68,3   | 41 |   |   |   |    |    |    |    |    |    |    |    |    |    |    | 1  |    |    | 3  | 7  | 1  | 2  |    | 2  | 1  | 1  | 1  |    |    |    |  |
| Aminoglycosides                                                                                                                     |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Streptomycin                                                                                                                        |  | 60 | 56,66  | 13 | 7 | 2 | 4 | 4  | 4  | 2  | 1  | 13 | 8  | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Gentamicin                                                                                                                          |  | 60 | 1,66   | 1  |   |   |   |    |    |    |    |    |    | 3  | 15 | 21 | 18 | 2  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Kanamycin                                                                                                                           |  | 57 | 36,8   | 21 |   |   |   |    |    |    |    |    |    |    | 1  | 7  | 14 | 10 | 3  | 1  |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + sulfonamides                                                                                                         |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Trimethoprim + Sulfonamide                                                                                                          |  | 59 | 52,54  | 31 |   |   |   |    |    |    |    | 1  | 1  | 1  | 1  | 1  |    |    |    | 1  | 2  | 3  | 2  | 4  | 5  | 2  | 2  |    |    |    |    |    |    |  |
| Penicillins                                                                                                                         |  |    |        |    |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
| Ampicillin                                                                                                                          |  | 57 | 54,38  | 31 |   |   |   |    |    |    |    | 1  | 3  | 2  | 2  | 1  | 5  | 5  | 3  | 2  | 1  |    |    | 1  |    |    |    |    |    |    |    |    |    |  |

**Table 13.7 Breakpoints used for antibiotic resistance testing of E.coli in Animals****Test Method Used**

|                |
|----------------|
| Disc diffusion |
| Agar dilution  |
| Broth dilution |
| E-test         |

**Standards used for testing**

|       |
|-------|
| NCCLS |
| CASFM |

**Subject to quality control**

| Escherichia coli                   | Standard for breakpoint | Breakpoint concentration (microg/ml) |              |             | Range tested concentration (microg/ml) |         | disk content microg | breakpoint Zone diameter (mm) |              |              |
|------------------------------------|-------------------------|--------------------------------------|--------------|-------------|----------------------------------------|---------|---------------------|-------------------------------|--------------|--------------|
|                                    |                         | Susceptible <=                       | Intermediate | Resistant > | lowest                                 | highest |                     | Susceptible >=                | Intermediate | Resistant <= |
| <b>Tetracycline</b>                |                         |                                      |              |             |                                        |         | 30                  | 19                            | 16,5         | 14           |
| <b>Amphenicols</b>                 |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| Chloramphenicol                    |                         |                                      |              |             |                                        |         | 30                  | 18                            | 15           | 12           |
| Florfenicol                        |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| <b>Fluoroquinolones</b>            |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| Ciprofloxacin                      |                         |                                      |              |             |                                        |         | 5                   | 21                            | 18           | 15           |
| Enrofloxacin                       |                         |                                      |              |             |                                        |         | 5                   | 22                            | 19,5         | 17           |
| <b>Quinolones</b>                  |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| Nalidixic acid                     |                         |                                      |              |             |                                        |         | 30                  | 19                            | 16           | 13           |
| <b>Trimethoprim</b>                |                         |                                      |              |             |                                        |         | 5                   | 16                            | 13           | 10           |
| <b>Sulfonamides</b>                |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| Sulfonamide                        |                         |                                      |              |             |                                        |         | 300                 | 17                            | 15           | 12           |
| <b>Aminoglycosides</b>             |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| Streptomycin                       |                         |                                      |              |             |                                        |         | 10                  | 15                            | 13           | 11           |
| Gentamicin                         |                         |                                      |              |             |                                        |         | 10                  | 15                            | 13,5         | 12           |
| Neomycin                           |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| Kanamycin                          |                         |                                      |              |             |                                        |         | 30                  | 18                            | 15,5         | 13           |
| <b>Trimethoprim + sulfonamides</b> |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| Trimethoprim + Sulfonamide         |                         |                                      |              |             |                                        |         | 25                  | 16                            | 13           | 10           |
| <b>Cephalosporin</b>               |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| 3rd generation cephalosporins      |                         |                                      |              |             |                                        |         | 30                  | 23                            | 18           | 14           |
| <b>Penicillins</b>                 |                         |                                      |              |             |                                        |         |                     |                               |              |              |
| Ampicillin                         |                         |                                      |              |             |                                        |         | 10                  | 17                            | 15           | 13           |

**Footnote**

Intermediate value is an average value between the two limits of the intermediate zone

## **4. FOODBORNE OUTBREAKS**

Foodborne outbreaks are incidences of two or more human cases of the same disease or infection where the cases are linked or are probably linked to the same food source. Situation, in which the observed human cases exceed the expected number of cases and where a same food source is suspected, is also indicative of a foodborne outbreak.

### **A. Foodborne outbreaks**

#### **National evaluation of the reported outbreaks in the country:**

##### **Trends in numbers of outbreaks and numbers of human cases involved**

Twenty ( 22) laboratory Salmonella confirmed general outbreaks were reported under the foodborne investigation approach (Table 12). Detailed analysis as regards the causative agent ,the source infection and the location of exposure is presented in the designated Food borne outbreak Table (12) of the zoonoses monitoring data base system.

Table 12. Foodborne outbreaks in humans

| Causative agent             | General outbreak | Family outbreak | Total Number in persons |      |             | Source          | Type of evidence              |           | Location of exposure | Contributing factors           |
|-----------------------------|------------------|-----------------|-------------------------|------|-------------|-----------------|-------------------------------|-----------|----------------------|--------------------------------|
|                             |                  |                 | ill                     | died | in hospital |                 | Suspected                     | Confirmed |                      |                                |
| 1                           | 2                | 3               | 4                       | 5    | 6           | 7               | 8                             | 9         | 10                   |                                |
| Salmonella                  | 1                |                 | 526                     | 0    | 13          | Water           | Report from patients          | 1         | Not reported         | Not reported                   |
| Salmonella                  |                  | 1               | 2                       | 0    | 2           | Water           | Report from patients          | 1         | Not reported         | Not reported                   |
| Salmonella                  |                  | 1               | 3                       | 0    | 1           | chicken         | Report from patients          | 1         | Home                 | Not reported                   |
| Salmonella                  | 1                |                 | 15                      | 0    | 5           | Egg             | Report from patients          | 1         | Restaurant           | Not Reported                   |
| Salmonella                  | 1                |                 | 125                     | 0    | 43          | Water           | Report from patients          | 1         | Not reported         | Not reported                   |
| Salmonella                  | 1                |                 | 17                      | 0    | 2           | Cheese          | Report from patients          | 1         | Not Reported         | Not reported                   |
| Salmonella                  | 1                |                 | 8                       | 0    | 8           | chicken         | Report from patients          | 1         | Restaurant           | Not Reported                   |
| Salmonella                  |                  | 1               | 2                       | 0    | 2           | Egg             | Report from patients          | 1         | Home                 | Contaminated raw product       |
| Salmonella                  | 1                |                 | 6                       | 0    | 6           | Egg             | Report from patients          | 1         | Hospital             | Not Reported                   |
| Salmonella                  | 1                |                 | 5                       | 0    | 5           | Egg             | Report from patients          | 1         | Home                 | Not Reported                   |
| Salmonella                  | 1                |                 | 20                      | 0    | 3           | Egg             | Report from patients          | 1         | Home                 | Not Reported                   |
| Salmonella                  | 1                |                 | 4                       | 0    | 1           | Egg             | Report from patients          | 1         | Hospital             | Not Reported                   |
| Salmonella                  |                  | 1               | 3                       | 0    | 3           | Egg             | Report from patients          | 1         | Home                 | Not Reported                   |
| Salmonella                  |                  | 1               | 4                       | 0    | 2           | Egg             | Report from patients          | 1         | Home                 | Not Reported                   |
| Salmonella                  |                  | 1               | 4                       | 0    | 2           | Egg             | Report from patients          | 1         | Outdoors             | Not Reported                   |
| Salmonella                  | 1                |                 | 7                       | 0    | 0           | Egg             | Report from patients          | 1         | Reataurant           | Not Reported                   |
| Salmonella                  |                  | 1               | 7                       | 0    | 1           | Pork            | Report from patients          | 1         | Home                 | Not Reported                   |
| Salmonella                  | 1                |                 | 4                       | 0    | 2           | Unknown         | Report from patients          | 1         | Restaurant           | Not Reported                   |
| Salmonella                  | 1                |                 | 1                       | 0    | 1           | Unknown         | Report from patients          | 1         | Outdoors- camping    | Not Reported                   |
| Salmonella                  |                  | 1               | 5                       | 0    | 1           | Unknown         | Report from patients          | 1         | Home                 | Not Reported                   |
| Salmonella                  | 1                |                 | 6                       | 0    | 1           | Unknown         | Report from patients          | 1         | Hotel                | Not Reported                   |
| Salmonella                  |                  | 1               | 3                       | 0    | 1           | Unknown         | Report from patients          | 1         | Restaurant           | Not Reported                   |
| Salmonella - S. Typhimurium | 1                |                 | 37                      | 0    | 0           | Water           | Case-control study            | 1         | Not reported         | Not Reported                   |
| Salmonella - S. Enteritidis |                  | 1               | 3                       | 0    | 1           | chicken         | Report from patients          | 1         | Home                 | Not Reported                   |
| Salmonella - S. Enteritidis | 1                |                 | 651                     | 1    | 247         | Dry fruits/nuts | Epidemiological investigation | 1         | church               | Contaminated raw product       |
| Salmonella - S. Enteritidis | 1                |                 | 2                       | 0    | 2           | Egg             | Report from patients          | 1         | Home                 | Contaminated raw product       |
| Salmonella - S. Enteritidis | 1                |                 | 5                       | 0    | 0           | Egg             | Cohort study                  | 1         | Hospital             | Not Reported                   |
| Salmonella - S. Enteritidis |                  | 1               | 4                       | 0    | 4           | Egg             | Report from patients          | 1         | outdoors             | Not Reported                   |
| Salmonella - S. Enteritidis |                  | 1               | 3                       | 0    | 1           | Pork            | Report from patients          | 1         | Home                 | Uncompleted cleaning of dishes |

|                             |   |   |    |   |    |         |   |                               |              |              |
|-----------------------------|---|---|----|---|----|---------|---|-------------------------------|--------------|--------------|
| Salmonella - S. Enteritidis |   | 1 | 2  | 0 | 2  | Unknown | 1 | Report from patients          | Home         | Not Reported |
| Salmonella - S. Enteritidis | 1 |   | 21 | 0 | 11 | Unknown | 1 | Report from patients          | Hospital     | Not Reported |
| Salmonella - S. Enteritidis |   | 1 | 2  | 0 | 2  | Unknown | 1 | Report from patients          | Not reported | Not Reported |
| Salmonella - S. Enteritidis | 1 |   | 38 | 0 | 0  | Unknown | 1 | Report from patients          | ship         | Not Reported |
| Salmonella - S. Enteritidis | 1 |   | 29 | 0 | 4  | Unknown | 1 | Report from patients          | Hotel        | Not Reported |
| Salmonella - S. Enteritidis | 1 |   | 10 | 0 | 6  | Unknown | 1 | Report from patients          | Hotel        | Not Reported |
| Salmonella - S. Heidelberg  | 1 |   | 9  | 0 | 8  | Pork    | 1 | Epidemiological investigation | Home         | Not reported |

### Footnote

In addition, 3 more (2 family and 1 general) outbreaks of unknown causal agent were reported. Source: chicken(1), Egg (1), Water (1). Total persons ill=144, Dead =0 and Hospitalized:49